

November 2018  
70-000003-00



# DIALED IN!



## Operations Manual Includes:

Game Setup - Testing & Adjustments - Parts Information - Reference Diagrams & Schematics - Service & Troubleshooting

Jersey Jack Pinball®, 1645 Oak Street, Lakewood, New Jersey 08701 Telephone: (732) 364-9900







## Manual Release 3.3

Information current at time of release (1.55).

Visit our customer support website, [\*\*https://www.jerseyjackpinball.com/support/\*\*](https://www.jerseyjackpinball.com/support/), and register your game. Be sure to include the game serial number. For your records, write the game serial number in the manual.

Serial Number \_\_\_\_\_

Jersey Jack Pinball® reserves the rights to make modifications and improvements to its products. The specifications and parts identified in this manual are subject to change without notice.





## Greetings, Jersey Jack Pinball® Fans.

Congratulations!

We proudly present you with this amazing resource to help you keep your game in top condition.

This manual was a labor of love from Butch Peel, who has an amazing **Passion** for **Pinball** and a knack for providing useful, easily understood, technical information to support this amazing product.

Creating a game that is not based on a movie or some other known license has its challenges. It was my belief that the talented Team at Jersey Jack Pinball® could make a great game that innovates *and* entertains - and we have all accomplished that.

The idea of putting a camera on a pinball machine was first hatched by me as an operator in 1977. I wanted to put a Polaroid camera on a game to take the player's picture for a high score as a keepsake of a great game. I'm happy that we are the first to do that as well as the first to let you flip flippers through a mobile device.

The Team at Jersey Jack Pinball® will continue to innovate and dream big as we create more smiles around the world and build more **Pinball** for everyone to enjoy, forever. Thank you for loving **Pinball**.

Best Regards,

Jack Guarnieri  
Founder, Jersey Jack Pinball®

# Table of Contents

## Section A - Game Assembly & Setup

A.1	Unpacking Your Dialed In Game	
	Unboxing Game .....	A-2
	Removing Playfield Glass .....	A-7
	Playfield Positions .....	A-8
	Installing Plumb Bob Tilt .....	A-10
	Playfield Pitch Bubble Level .....	A-11
A.2	Dialed In Rules & Shot Maps	
	Skill Shots .....	A-12
	Disaster Modes .....	A-13
	Crazy Bob's Modes - Qualifying & Beginning .....	A-14
	Crazy Bob's Modes - Emoji Overload .....	A-15
	Crazy Bob's Modes - Selfie Time .....	A-16
	Crazy Bob's Modes - Lottery Frenzy .....	A-17
	Crazy Bob's Drones Gone Wild Multiball .....	A-18
	Crazy Bob's High Voltage Multiball .....	A-19
	Crazy Bob's Monkey Wrench Multiball .....	A-20
	Under Attack Multiball - Qualifying & Beginning .....	A-21
	Under Attack Multiball - Playing .....	A-22
	Quantum Theater Modes - Drone Captive Ball .....	A-23
	Quantum Theater Modes - Spider Spinner .....	A-24
	Quantum Theater Modes - Kilowatt Drop Targets .....	A-25
	Quantum Theater Modes - Train Bash Target .....	A-26
	Mystery Awards & Other Cool Features! .....	A-27
	Dialed In Rules Flowchart .....	A-28

## Section B - The Dialed In Menu System

B.1	Menu System Basics .....	B-2
B.2	Tests .....	B-3
B.3	Settings .....	B-23
B.4	Audits .....	B-39
B.5	Utilities .....	B-40
B.6	Install Presets .....	B-54
B.7	Reports .....	B-55
B.8	Resets .....	B-56



Section C - Game Parts Information

DI Lower Cabinet Assemblies..... C-2

DI Backbox Assemblies..... C-4

Above-Playfield Assemblies ..... C-6

Under-Playfield Assemblies ..... C-8

DI Drone Wire Ramp Assembly, PN: 13-002005-00..... C-10

DI Left Ramp Exit Wire Ramp Assembly, PN: 13-002006-00 ..... C-11

Right Flipper Assembly, Mod UL, PN: 51-000001-14..... C-12

Left Flipper Assembly, PN: 51-000002-00..... C-14

Slingshot Assembly, 23-800, PN: 51-000003-00..... C-16

Pop Bumper Ring & Rod Assembly, PN: 11-005004-01

Pop Bumper Top Assembly, White/Yellow/White, PN: 51-000106-949..... C-18

Pop Bumper Bottom Assembly, 26-1200, PN: 51-000004-01 ..... C-19

5-Ball Trough Assembly, PN: 51-000021-00 ..... C-20

Kickback Assembly, Left Mount, PN: 51-000025-00 ..... C-21

Auto-Launch Assembly, PN: 51-000026-00 ..... C-22

27" LCD Lock/Latch Brkt Assy, Left, PN: 10-008003-00 ..... C-23

27" LCD Lock/Latch Brkt Assy, Right, PN: 10-008003-01..... C-23

Playfield Magnet Assembly, Adjustable Core, PN: 51-000024-00

Playfield Magnet Assembly, Fixed Core, PN: 51-000024-01 ..... C-24

Plumb Bob Tilt Assembly, PN: 51-000028-00 ..... C-25

Knocker Assembly, Vertical, PN: 51-000032-01 ..... C-26

Cabinet Headphone Jack Assembly, PN: 51-000064-00 ..... C-27

Ball Shooter Assemblies, PN: 51-000087-0X..... C-28

Moving Target Assembly, PN: 51-000081-00 ..... C-30

Moving Tgt Sculpture Mtg Brkt Assembly, PN: 51-000081-20 ..... C-32

Trap Door Underside Assembly, PN: 51-000082-00..... C-34

DI Trap Door Surface Assembly, PN: 51-000082-10

Flap Gate Assembly, PN: 51-000085-00..... C-36

Ball Scoop Assembly, Left Side Entrance, PN: 51-000083-00..... C-37

3-Ball Lock Assembly, PN: 51-000084-00 ..... C-38

Inline Kicker Assembly, PN: 51-000086-00 ..... C-39

Power Box Assembly, Front Outlet, PN: 51-005001-01

Filter Box Assembly, PN: 51-005023-00 ..... C-40

Shaker Motor Assembly, PN: 51-005027-01..... C-41

27" LCD Monitor Assembly, Backbox PCBs, PN: 51-005032-10..... C-42

USB Camera Assembly, PN: 51-005041-00

Backbox Mount Solid State Drive Assembly, 60GB, PN: 51-005044-02..... C-43

27" LCD Pivot/Swing Assembly, PN: 51-005043-00 ..... C-44

**Section C - Game Parts Information - (continued)**

Backbox Speaker Bar Assembly, Wood, PN: 51-005053-00 .....	C-45
Backbox Mount PCB Assembly, PN: 51-005045-00 .....	C-46
Flasher Topper Assembly, PN: 51-005048-00 .....	C-48
DI Back Panel Assembly, PN: 52-000047-00 .....	C-49
DI Quantum Theater Assembly, PN: 52-000048-00.....	C-50
DI Smartphone Assembly, PN: 52-000049-00 .....	C-52
DI Left Ramp Assemblies, PN: 52-000050-X0.....	C-54
DI Upper Left Ramp Assemblies, PN: 52-000051-X0 .....	C-56
DI 3-Ball Lock Ramp Assembly, PN: 52-000054-00 .....	C-58
DI Robot Assembly, PN: 52-000056-00.....	C-59
DI Robot & Betty Sculpture Assembly, PN: 52-000056-10 .....	C-60
DI Left Side Playfield Plastic Assembly, PN: 52-000059-00.....	C-61
DI Bottom Arch Assemblies, PN: 52-000060-0X .....	C-62
DI Mini Playfield Assembly, PN: 52-000062-00.....	C-64
DI Topper Printed Plastics Assembly, PN: 52-000070-10 .....	C-65
Coil, Motor & Light Table .....	C-66
70-Volt Coil Locations - Above Playfield.....	C-68
70-Volt Coil Locations - Under Playfield.....	C-70
20-Volt Coil Locations - Above Playfield .....	
12-Volt Motor & Light Locations - Above Playfield .....	C-72
20-Volt Coil Locations - Under Playfield .....	
12-Volt Motor & Light Locations - Under Playfield .....	C-74
Playfield Printed Circuit Boards - Above Playfield.....	C-76
Playfield Printed Circuit Boards - Under Playfield.....	C-78
Playfield Feature Lighting (RGB LEDs) - Above Playfield.....	C-80
Playfield Feature Lighting (RGB LEDs) - Under Playfield.....	C-84
RGB LED Feature Lighting Wiring - Under Playfield.....	C-88
Playfield GI Lighting & Flashers (LEDs) - Above Playfield .....	C-90
Playfield GI Lighting & Flashers (LEDs) - Under Playfield.....	C-92
GI Lighting & Flasher Wiring - Under Playfield.....	C-94
Opto Wiring - Under Playfield .....	C-96
Playfield Switch Locations - Above Playfield .....	C-98
Playfield Switch Locations - Under Playfield .....	C-102
Dedicated Switch Locations .....	C-106
Playfield Printed Plastics .....	C-108
Clear Plastics, Bumper Caps, Flasher Domes & Flipper Bats .....	C-110
Playfield Sculptures/Toys .....	C-112



**Section C - Game Parts Information - (continued)**

- Game Decals & Mylar Playfield Protectors ..... C-114
- Rubber Rings, Bumpers & Sleeves ..... C-116
- Plastic Playfield Posts & Supports ..... C-118
- Metal Playfield Posts, Screws & Hex Spacers..... C-120
- Woodrails, Flatrails, Brackets & Ball Deflectors ..... C-122
- Wire Ramps & Ball Gates ..... C-124
- Under-Playfield Supports & Brackets..... C-126
- Assembly Mounting Hardware Table ..... C-128
- Assembly Cables Table ..... C-132
- Matrixed Switch Wiring Table ..... C-134
- Dedicated Switch Wiring Table ..... C-135
- 70-Volt Coil Wiring Table..... C-136
- 20-Volt Coil Wiring Table
- 12-Volt Motor & Light Wiring Table ..... C-137

**Section D - Reference Diagrams & Schematics**

- 5-Ball Trough Opto Receiver Board, PN: 15-000004-00
  - Drawing & Parts List ..... D-2
  - Schematic ..... D-3
  - Connector Pin-outs..... D-4
- 5-Ball Trough Opto Transmitter Board, PN: 15-000004-01
  - Drawing & Parts List ..... D-5
  - Schematic
  - Connector Pin-outs..... D-6
- Opto I/O Board, PN: 15-000007-00
  - Drawing & Parts List ..... D-7
  - Schematic ..... D-8
  - Left Opto I/O Board Connector Pin-outs ..... D-9
  - Right Opto I/O Board Connector Pin-outs..... D-10
- RGB Beacon Flasher Board, PN: 15-000030-02
  - Drawing & Parts List
  - Schematic
  - Connector Pin-outs..... D-11
- RGB Beacon Flasher PCB Assembly, T LED FP, 4V, PN: 15-004063-04
  - Drawing & Parts List
  - Schematic
  - Connector Pin-outs..... D-12

**Section D - Reference Diagrams & Schematics - (continued)**

DI Smartphone RGB LED Board, PN: 15-000042-00	
Drawing & Parts List .....	D-13
Schematic .....	D-14
Connector Pin-outs.....	D-15
DI Flipper Area RGB LED Board, D1, PN: 15-000053-01	
Drawing & Parts List .....	D-16
Schematic .....	D-17
Connector Pin-outs.....	D-18
DI Flipper Area RGB LED Board, T LED FP, D1, PN: 15-000053-11	
Drawing & Parts List .....	D-19
Schematic .....	D-20
Connector Pin-outs.....	D-21
DI DIALED IN/Left RGB LED Board, D2, PN: 15-000053-02	
Drawing & Parts List .....	D-22
Schematic .....	D-23
Connector Pin-outs.....	D-24
DI DIALED IN/Left RGB LED Board, T LED FP, D2, PN: 15-000053-12	
Drawing & Parts List .....	D-25
Schematic .....	D-26
Connector Pin-outs.....	D-27
DI Left Shots RGB LED Board, D3, PN: 15-000053-03	
Drawing & Parts List .....	D-28
Schematic .....	D-29
Connector Pin-outs.....	D-30
DI Left Shots RGB LED Board, T LED FP, D3, PN: 15-000053-13	
Drawing & Parts List .....	D-31
Schematic .....	D-32
Connector Pin-outs.....	D-33
DI Drone Magnet RGB LED Board, D4, PN: 15-000053-04	
Drawing & Parts List .....	D-34
Schematic .....	D-35
Connector Pin-outs.....	D-36
DI Drone Magnet RGB LED Board, T LED FP, D4, PN: 15-000053-14	
Drawing & Parts List .....	D-37
Schematic .....	D-38
Connector Pin-outs.....	D-39



**Section D - Reference Diagrams & Schematics - (continued)**

DI Right Shots RGB LED Board, D5, PN: 15-000053-05

- Drawing & Parts List ..... D-40
- Schematic ..... D-41
- Connector Pin-outs..... D-42

DI Right Shots RGB LED Board, T LED FP, D5, PN: 15-000053-15

- Drawing & Parts List ..... D-43
- Schematic ..... D-44
- Connector Pin-outs..... D-45

DI Center Shots RGB LED Board, D6, PN: 15-000053-06

- Drawing & Parts List ..... D-46
- Schematic ..... D-47
- Connector Pin-outs..... D-48

DI Center Shots RGB LED Board, T LED FP, D6, PN: 15-000053-16

- Drawing & Parts List ..... D-49
- Schematic ..... D-50
- Connector Pin-outs..... D-51

DI Pop Bumper Area RGB LED Board, D7, PN: 15-000053-07

- Drawing & Parts List ..... D-52
- Schematic ..... D-53
- Connector Pin-outs..... D-54

DI Pop Bumper Area RGB LED Board, T LED FP, D7, PN: 15-000053-17

- Drawing & Parts List ..... D-55
- Schematic ..... D-56
- Connector Pin-outs..... D-57

DI Shooter Lane RGB LED Board, D8, PN: 15-000053-08

- Drawing & Parts List ..... D-58
- Schematic ..... D-59
- Connector Pin-outs..... D-60

DI Shooter Lane RGB LED Board, T LED FP, D8, PN: 15-000053-18

- Drawing & Parts List ..... D-61
- Schematic ..... D-62
- Connector Pin-outs..... D-63

GI LED Board, 2.5mm, PN: 15-000027-01

GI LED PCB Assy, T/R LED FP, 7.5V, PN: 15-004127-07

- Drawing & Parts List
- Schematic
- Connector Pin-outs..... D-64

Section D - Reference Diagrams & Schematics - (continued)

RGB GI Board, PN: 15-000051-00	
Drawing & Parts List	
Schematic	
Connector Pin-outs.....	D-65
RGB GI PCB Assembly, T LED FP, 4V, PN: 15-004151-04	
Drawing & Parts List	
Schematic	
Connector Pin-outs.....	D-66
Single RGB LED Board, 2.5mm, PN: 15-000028-01	
Drawing & Parts List .....	D-67
Schematic	
Connector Pin-outs.....	D-68
Single RGB LED PCB Assembly, T LED FP, 4V, PN: 15-004128-04	
Drawing & Parts List .....	D-69
Schematic	
Connector Pin-outs.....	D-70
RGB LED Controller PCB Assembly, 2.5mm, w/Ferrites, PN: 15-004031-02	
Drawing & Parts List .....	D-71
Schematic .....	D-72
Connector Pin-outs.....	D-73
Bus, Accelerometer & GI Controller PCB Assembly, 2.5mm, w/Ferrites, PN: 15-004033-02	
Drawing & Parts List .....	D-76
Bus Control & Accelerometer Schematic .....	D-78
Power Input & GI Control Schematic.....	D-79
Connector Pin-outs.....	D-80
Sound Amplifier Board, PN: 15-000002-00	
Drawing & Parts List .....	D-84
Schematic .....	D-85
Connector Pin-outs.....	D-86
I/O PCB Assembly, DI, PN: 15-004001-03	
Drawing & Parts List .....	D-87
Matrixed Switches Schematic.....	D-89
Dedicated Switches Schematic.....	D-90
Device Control Schematic.....	D-91
70-Volt Drivers (1-8) Schematic .....	D-92
70-Volt Drivers (9-16) Schematic .....	D-93

**Section D - Reference Diagrams & Schematics - (continued)**

- 70-Volt Drivers (17-24) Schematic..... D-94
- 70-Volt Drivers (25-32) Schematic..... D-95
- 70-Volt Drivers (33-40) Schematic..... D-96
- 20-Volt Drivers (49-56) Schematic..... D-97
- 20-Volt Drivers (57-64) Schematic..... D-98
- 20-Volt Drivers (65-72) Schematic..... D-99
- 12-Volt Drivers (41-48) Schematic..... D-100
- 12-Volt Drivers (73-80) Schematic..... D-101
- Power Input/Rectification Schematic..... D-102
- Connector Pin-outs..... D-103
- CPU Board, PN: 15-000000-01
  - Connector Pin-outs..... D-106
- Motor Relay Board, PN: 15-000009-00
  - Drawing & Parts List
  - Schematic
  - Connector Pin-outs..... D-108
- Cabinet Headphone Board, PN: 15-000052-00
  - Drawing & Parts List
  - Schematic
  - Connector Pin-outs..... D-109
- European Coin Door Board, PN: 15-000017-00
  - Drawing & Parts List
  - Schematic..... D-110
  - Connector Pin-outs..... D-111
- Fuse Locations..... D-112
- Fuse Information..... D-113
- Fused Power Stream..... D-114
- Lower Cabinet Wiring Diagram..... D-115
- Backbox Wiring Diagram..... D-116
- Supply Voltage Conversion..... D-117

**Section E - Game Service & Troubleshooting**

- E.1 Cabinet Sound Controls..... E-2
- E.2 The Quantum Theater Magnet..... E-3
- E.3 The Dialed In Lighting System
  - Theory of Operation..... E-4



**Section E - *Game Service & Troubleshooting* - (continued)**

E.4 Dialed In Playfield Post Adjustments ..... E-6

E.5 The Jersey Jack Pinball® App ..... E-8

E.6 Performing a Full Software Update ..... E-9

E.7 Replacing Your Game's CPU Battery ..... E-11

*Appendices*

25¢ Standard USA Coin Door Assembly, 12V, No Headphone Drawing & Parts List

Standard European Coin Door Assembly, No Headphone Drawing & Parts List

Acronyms & Abbreviations

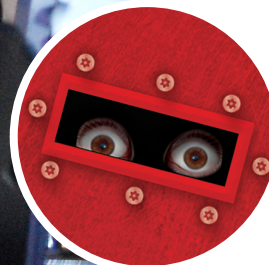
Warranty Information

Warnings & Notices



# Section A

## Game Assembly & Setup



## A.1 Unpacking Your Dialed In Game

**1)** Using wire cutters, remove all shipping bands from the outside of the carton, noting the side with the “TRUCK THIS SIDE ONLY” marking (see figure A1). With a utility knife and needle-nose pliers, carefully cut the tape and remove all staples along the seams of the carton’s top flaps, then fold them open (see figure A2). Remove the large, flat sheet of cardboard. Pull out the large parts box (red in figure A2) and remove its contents. Check all loose parts against the packing list on this page.

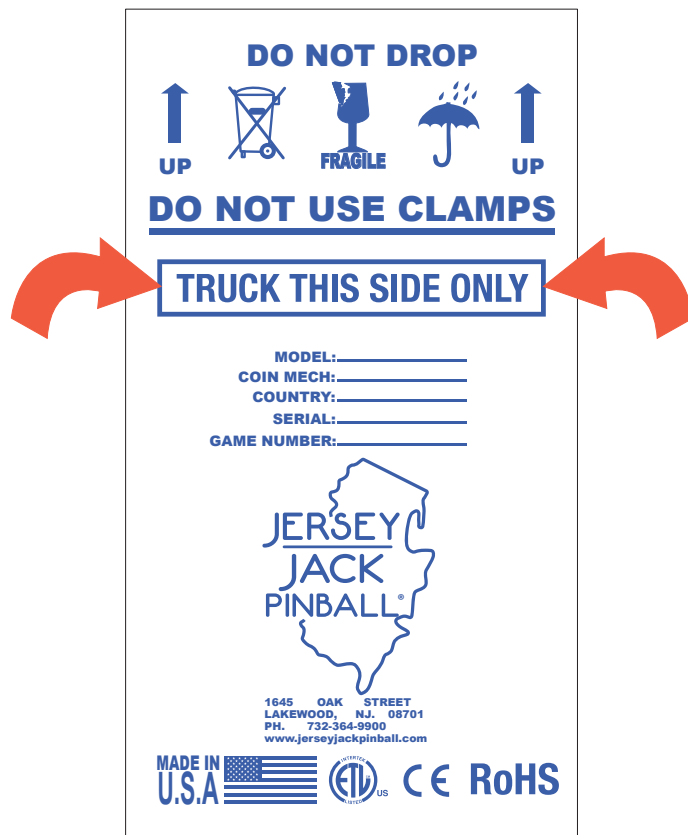


Figure A1. The “TRUCK THIS SIDE ONLY” side of the box.

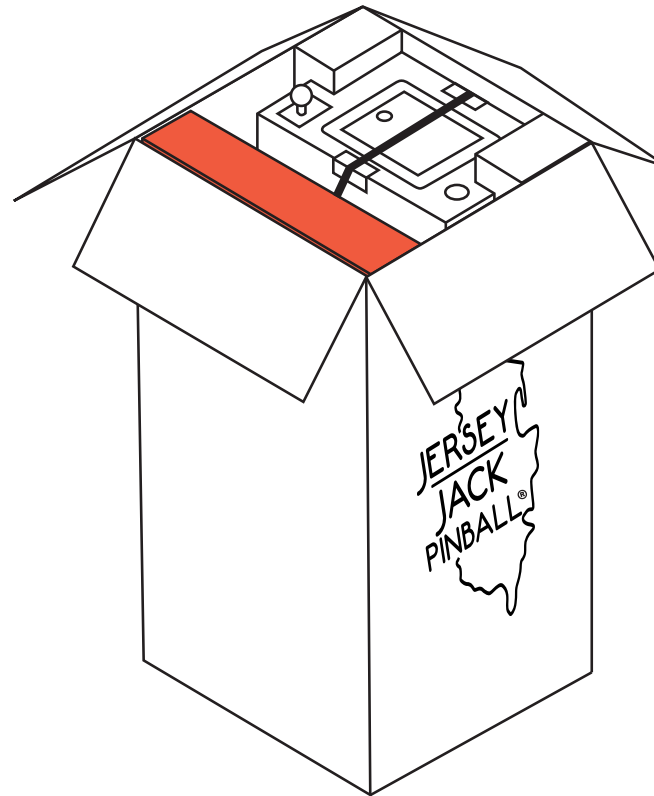


Figure A2. Opening the shipping carton.

### Tools Required:

Wire cutters  
Needle-nose pliers  
Utility knife  
Ratchet and 5/8” socket (or 5/8” wrench)  
#2 Phillips screwdriver  
Torpedo bubble level

### Large Parts Box Packing List

4 pinball machine legs, with levelers and tightening nuts  
8 acorn-head leg bolts  
1 plumb bob weight, with nylon wing nut  
5 steel mirror-finish pinballs  
1 USA line power cable  
1 “L”-shaped, 5/16” hex key  
assorted spare game decals  
spare set of slingshot plastics  
assorted plastic game key fobs  
game manual CD

**Note:** If anything is missing from your parts box, send an email to [warranty@jerseyjackpinball.com](mailto:warranty@jerseyjackpinball.com) for a replacement.

**If you wish to save your shipping carton:**

**2)** With the help of at least one other person, carefully tip the carton over and lay it on its “TRUCK THIS SIDE ONLY” side (see figure A3a). Using the nylon strap as a handle, slide the game and packing materials out of the carton.

**Note:** You may need to spread a blanket or some other form of cushion under the game to protect the floor.

**3) DO NOT CUT THE NYLON STRAP** holding the backbox down at this point. Remove the foam padding from the corners of the game and carefully stand it upright again (as it was in the carton during shipping).

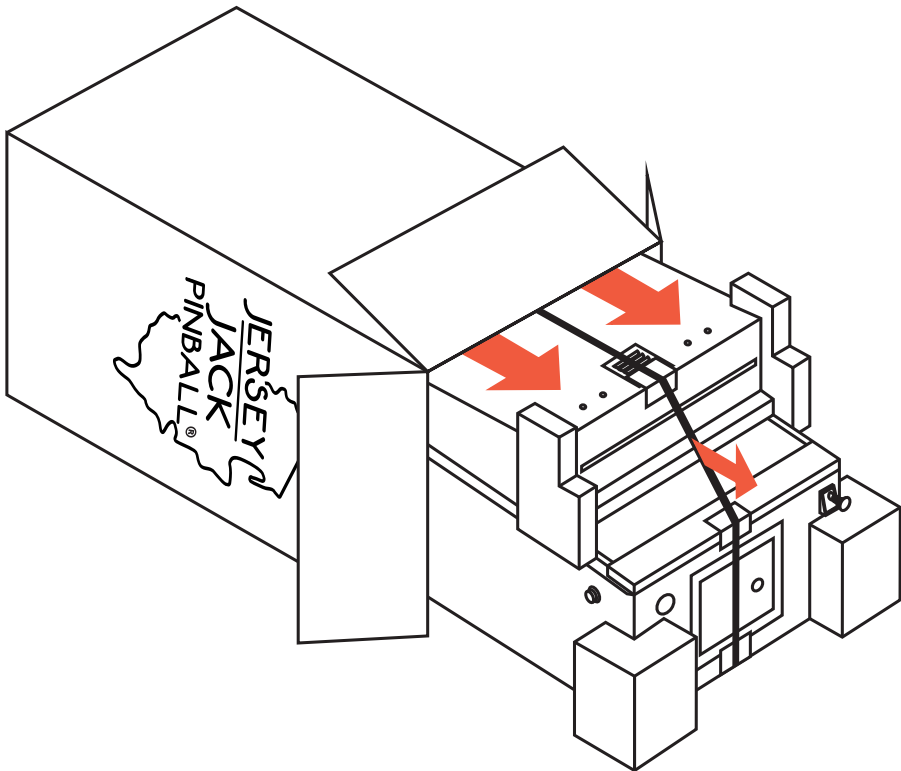
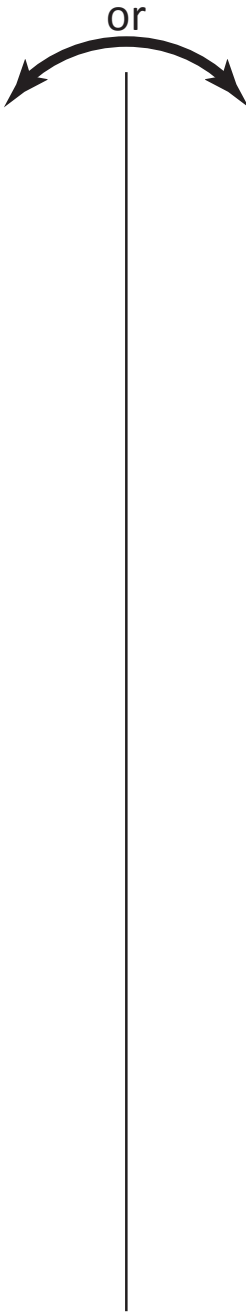


Figure A3a. Sliding the game out of the carton.



**If you do not wish to save your shipping carton:**

**2)** Using a utility knife, remove the “TRUCK THIS SIDE ONLY” side of the shipping carton (see figure A3b). Carefully cut down the left and right sides of the box. Let the flap fall to the floor, then cut across the bottom edge (taking care not to damage the floor).

**3) DO NOT CUT THE NYLON STRAP** holding the backbox down at this point. Remove the foam padding from the corners of the game.

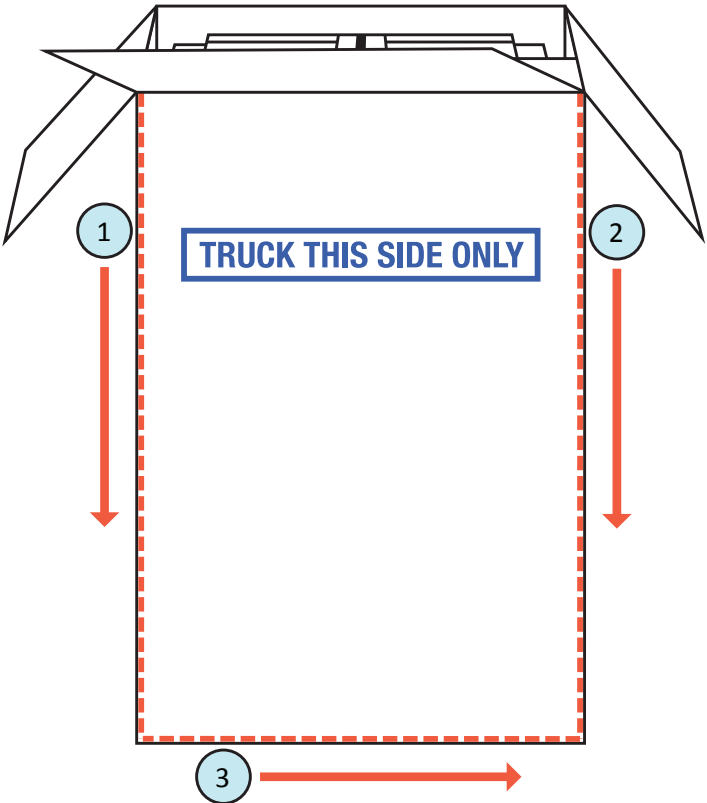


Figure A3b. Removing the “TRUCK THIS SIDE ONLY” side of the carton.

**4)** Locate the game's four legs. Add a tightening nut and a leg leveler to each leg as shown in figure A4: a) Install a tightening nut onto each leveler. Thread it all the way down, next to the foot of the leveler. b) Thread the leveler/nut into each leg until the tightening nut is against its underside. With the cabinet set up on a perfectly level surface, this should provide a playfield pitch of approximately 6.5°, front to back.

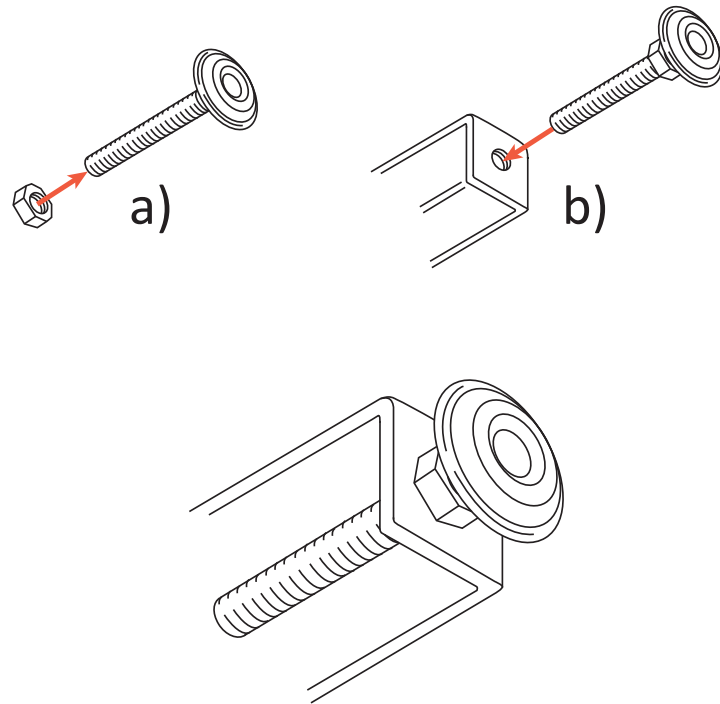


Figure A4. Installing a leg leveler and tightening nut.

**5)** Locate the eight acorn-head leg bolts in the loose parts. Thread 2 leg bolts through each leg and attach it to the cabinet (see figure A5). Using a 5/8" socket and ratchet or a 5/8" wrench, tighten the bolts firmly, while maintaining pressure (in the direction of the red arrow) on each leg.

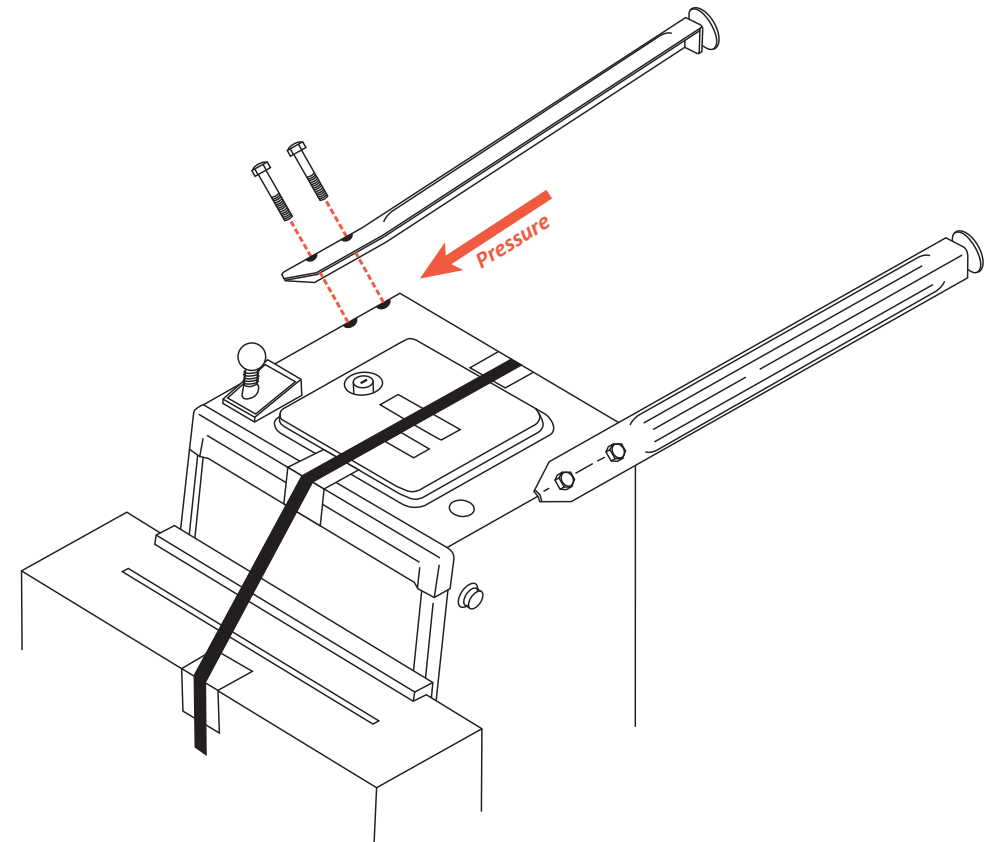


Figure A5. Installing the front legs.



**6)** With the help of at least one other person, carefully tip the game onto its front legs. Lift the rear of the cabinet and have two people support it or place it on a sturdy support. As with the front legs, attach the two rear legs, using the four remaining acorn-head bolts. Tighten all bolts firmly, while maintaining upward pressure on the legs (see figure A6). Lower the game onto its legs.

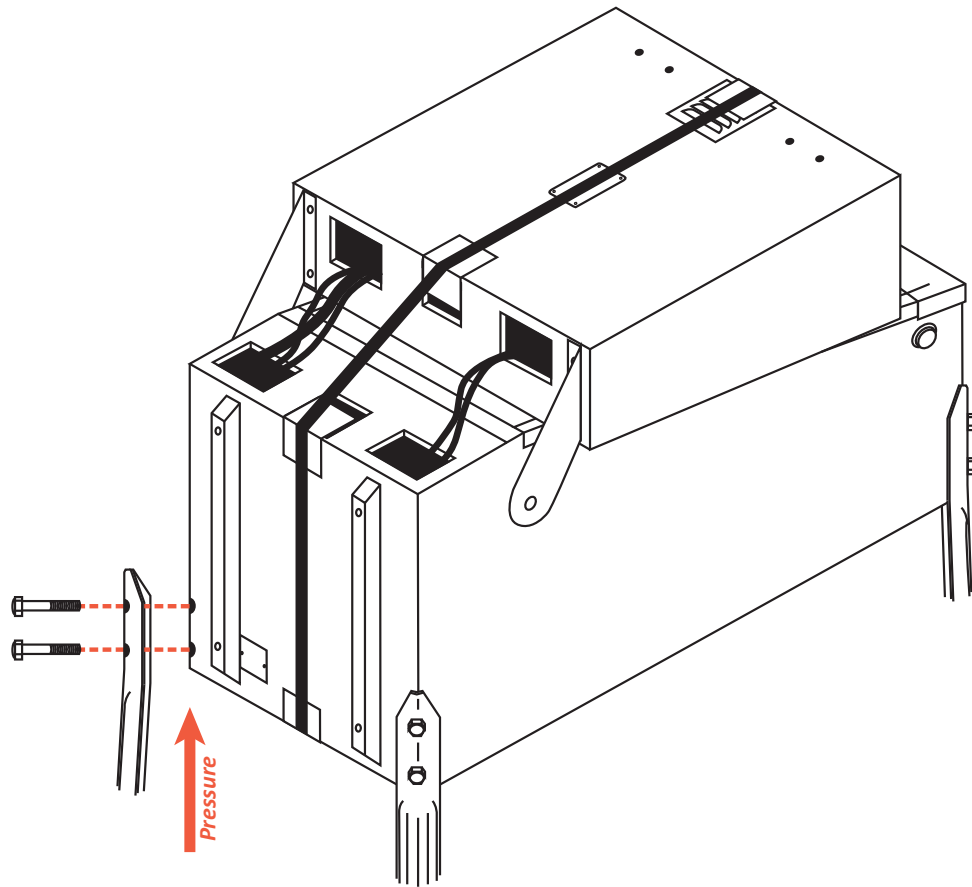


Figure A6. Installing the rear legs.

**7)** Using wire cutters, cut the nylon strap holding the backbox down (**CAUTION: PROTECT YOUR EYES** and have helpers/bystanders move away! The sharp ends of the cut strap will likely whip violently away from the game!). Remove the remainder of the packing material from the game and raise the backbox to its upright position (see figure A7). Ensure that the cables and wires in the neck of the game do not get pinched at any time during this process.

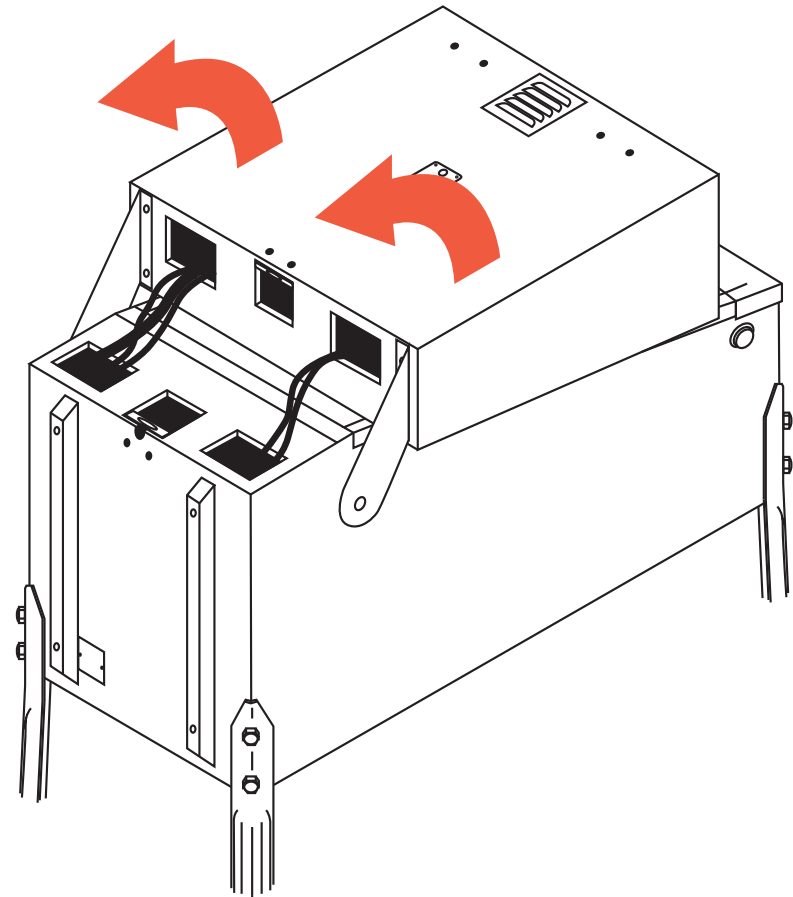


Figure A7. Raising the backbox to its upright position.

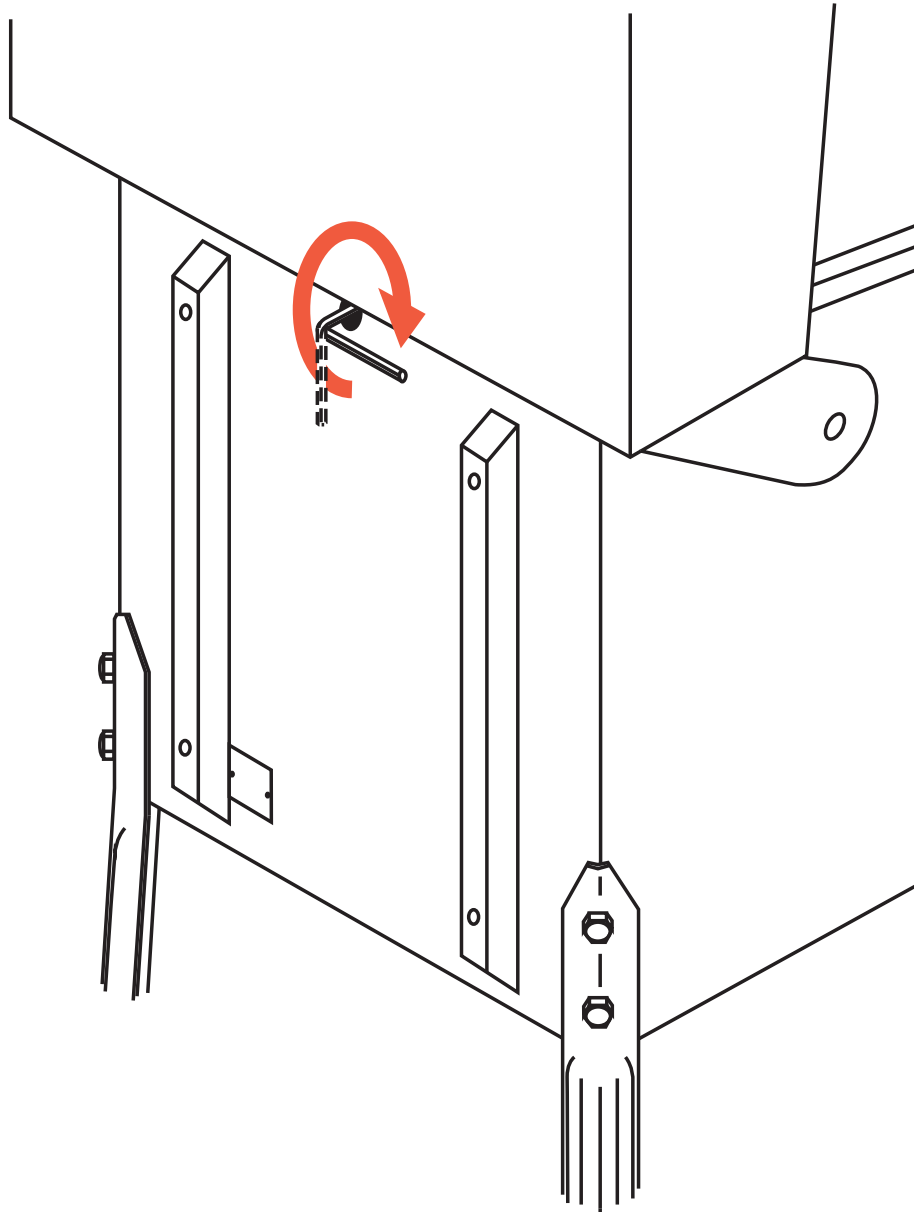


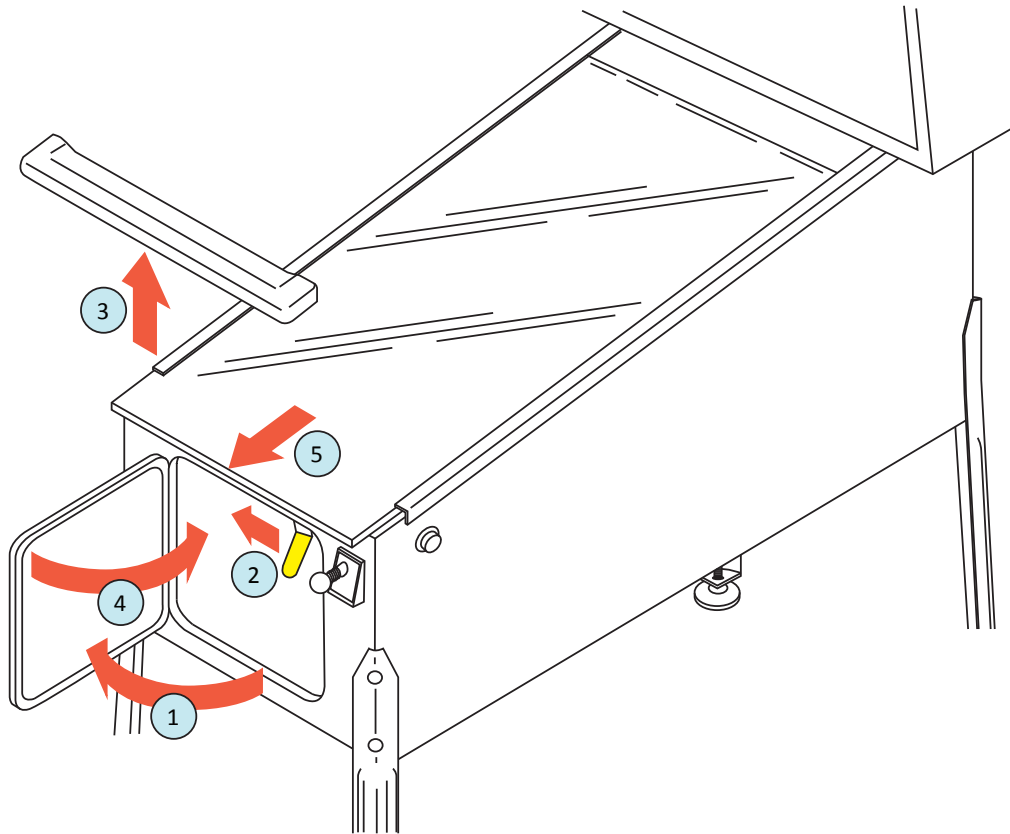
Figure A8. Locking the backbox in the upright position.

**8)** Locate the “L”-shaped, 5/16” hex key for the backbox Roto-Lock in the loose parts. Insert it into the hole at the base of the backbox and turn it a full 270 degrees CW (see figure A8).

**Note:** When the Roto-Lock is in the fully locked position, the key will not turn any further in the CW direction.

**9)** Using at least two people, lift the game and move it to the intended play area.  
**DO NOT SLIDE LEGS ACROSS THE FLOOR.**

**10)** You will find the coin door keys attached to the ball shooter, on the front of the game. Cut them loose with a pair of wire cutters. Remove the playfield glass: 1) open the coin door, 2) slide the yellow lockdown bar lever to the left, 3) lift the lockdown bar straight up and out, 4) CLOSE AND LOCK THE COIN DOOR (to prevent scratching of playfield glass), then 5) slide the playfield glass off of the front of the cabinet (see figure A9). Carefully set the glass aside.

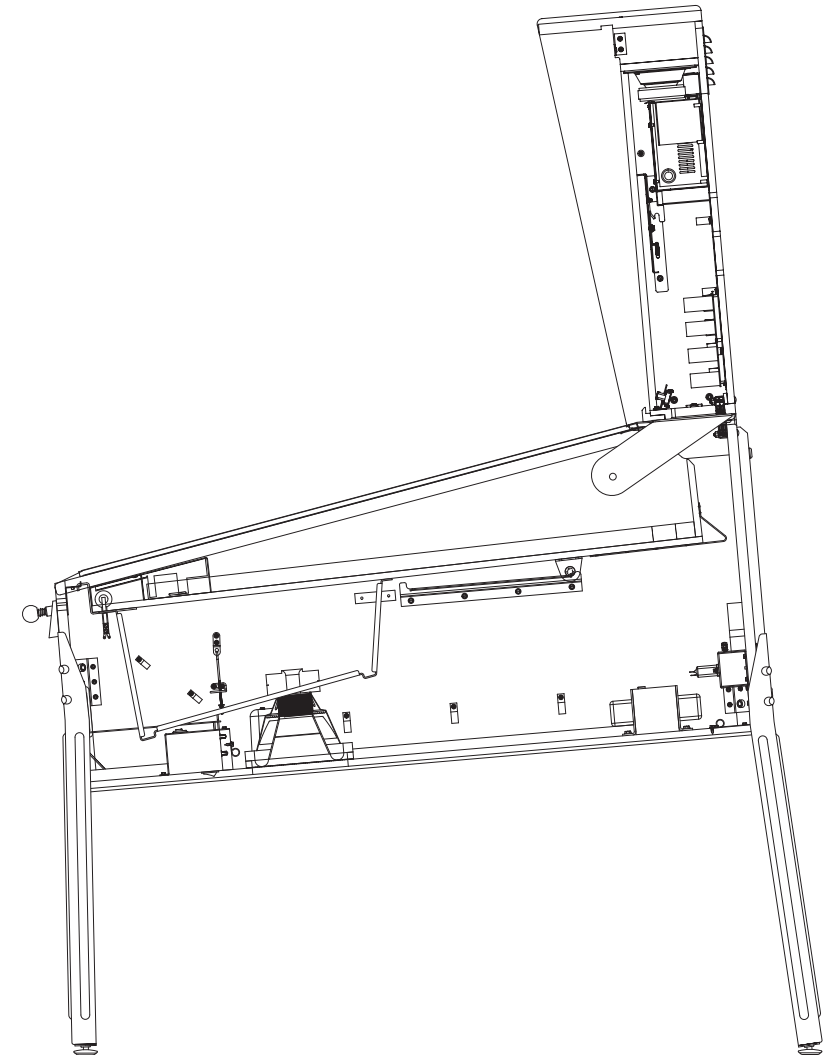


**Figure A9. Removing the playfield glass.**

**11)** Locate the game's five pinballs in the loose parts. Place all five balls in the ball trough (drop them onto the playfield, below the flippers, and allow them to drain). Level the game side-to-side by placing a bubble level on the playfield surface (top

and bottom) and adjusting the leg levelers and tightening nuts accordingly. When finished, secure the tightening nut against the underside of each leg.

**12)** Your Jersey Jack Pinball® playfield is designed to rest in four distinct positions in its cabinet for game play, cleaning and maintenance. Figure A10 shows the playfield in its standard position.



**Figure A10. Playfield in the game play position.**

**13)** Grasp the playfield under its bottom arch and swing it upward until the playfield support brackets underneath are fully visible (figure A11). Move the playfield to position 2 (figure A12). Pull it upward and outward until the first pair of feet reach the top of the lockdown bar receiver; then lower the playfield, resting the feet in the steel channel.

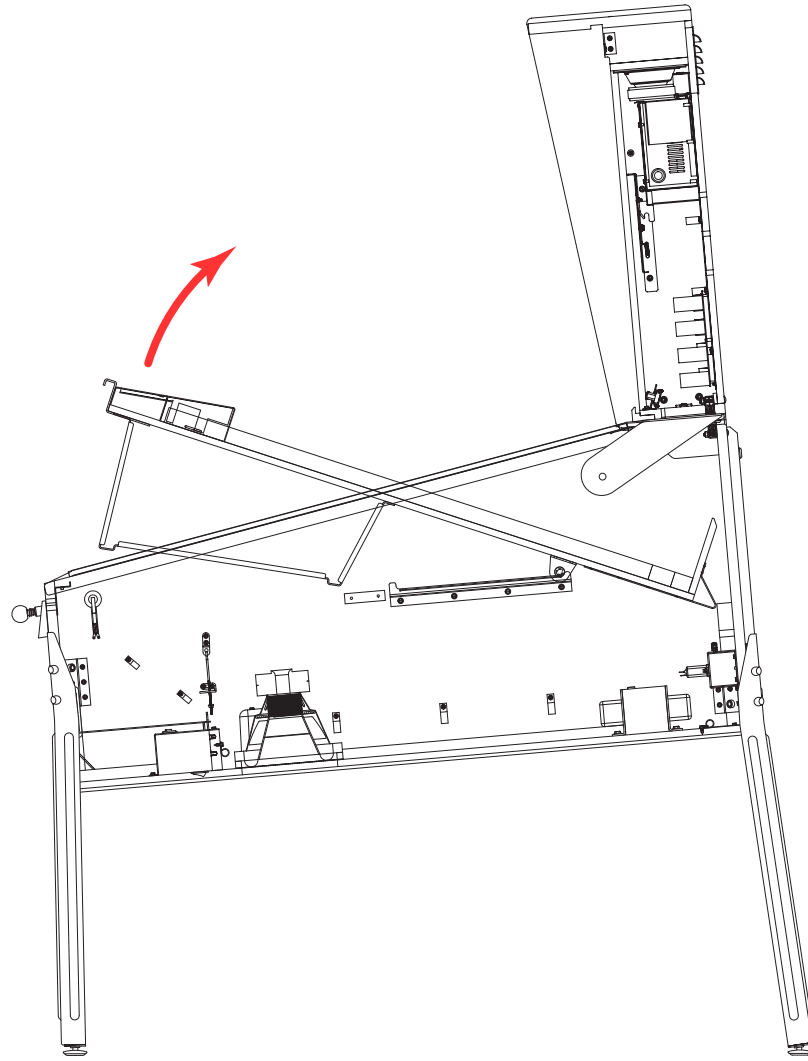


Figure A11. Swing the playfield upward.

**Note:** The game has a safety mechanism to keep the balls in the trough from falling out when the playfield is lifted.

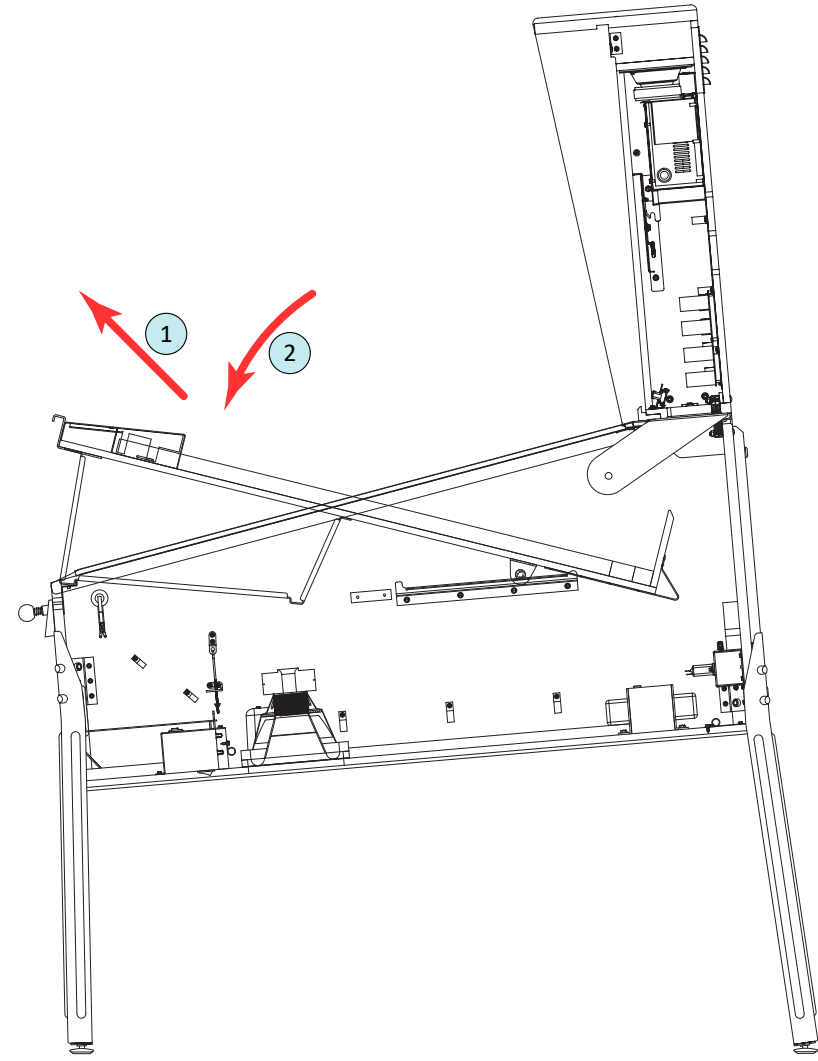


Figure A12. Moving the playfield to position 2.

**14)** Move the playfield from position 2 to 3 (figure A13). Pull it upward and outward until the second pair of feet in the support brackets reach the top of the lockdown bar receiver; again, lower the playfield, resting the feet in the channel.

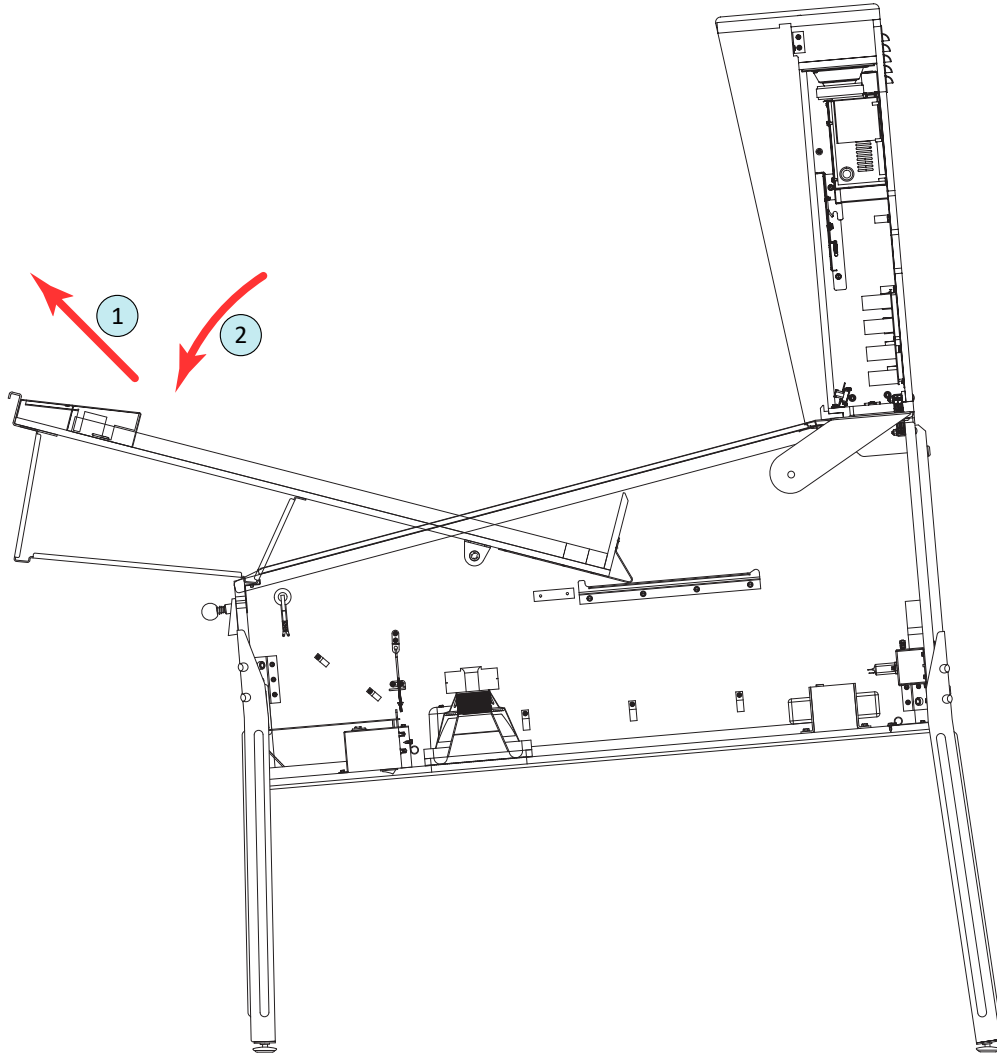


Figure A13. Moving the playfield to position 3.

**15)** Move the playfield from position 3 to 4 (figure A14). Grasp the two playfield support brackets and pull the playfield outward until the playfield support/slide bracket stop is reached; then swing the playfield up, resting the bottom arch against the front of the backbox.

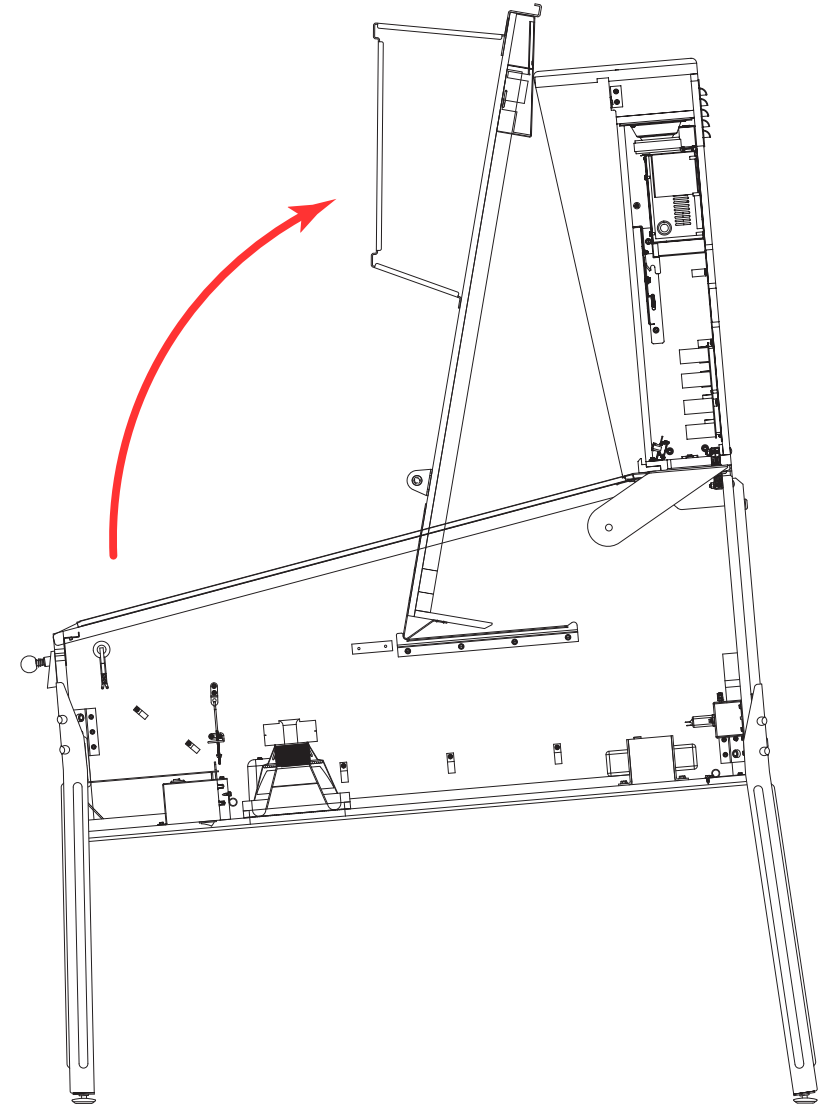


Figure A14. Moving the playfield to position 4.

**16)** Locate the plumb bob weight and nylon wing nut in the loose parts. Locate the plumb bob tilt hanger wire and contact brackets, mounted on the inside, left sidewall of the lower cabinet. Slide the weight onto the straight end of the hanger wire and thread the wing nut onto the shaft underneath it (figure A15). Raising the weight higher up the hanger wire (by tightening the wing nut underneath it) makes the tilt mechanism more sensitive; lowering the weight makes it less sensitive.

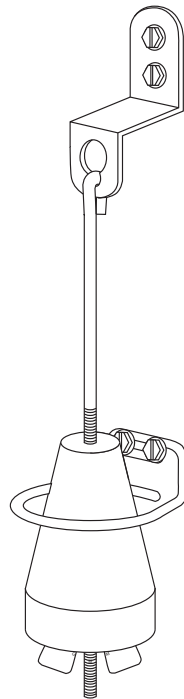


Figure A15. Assembled plumb bob tilt mechanism.

**17)** Locate the power cord in the loose parts. Remove the line cord cover plate from the rear of the lower cabinet. Plug the female end of the power cord into the exposed receptacle, inside of the back of the machine. Replace the line cord cover plate and plug the other end of the power cord into a grounded wall outlet. **DO NOT CUT THE GROUND LUG OFF OF THE POWER CORD!**

**18)** Power up the game (the on/off switch is located under the cabinet, just behind the right front leg; it rocks in one direction to turn the game on and in the reverse direction to turn it off) and test it for proper operation. Adjust game settings as appropriate (see Game Menu System, Section B). Reinstall the playfield glass (and lockdown bar) in the cabinet; your game is ready to play!

**Note:** Before transporting the game, lower the backbox (figure A16). Insert the 5/16" hex key into the hole at the base of the backbox and turn it a full 270 degrees CCW. Ensure that cables and wires in the neck of the machine do not get pinched or pulled taut as the backbox is laid down. Place a large piece of cardboard (or the piece of foam used when the game was shipped) between the top lip of the backbox and the lower cabinet to protect the cabinet side rails. Tie or strap the backbox securely to the cabinet to prevent it from bouncing during transit.

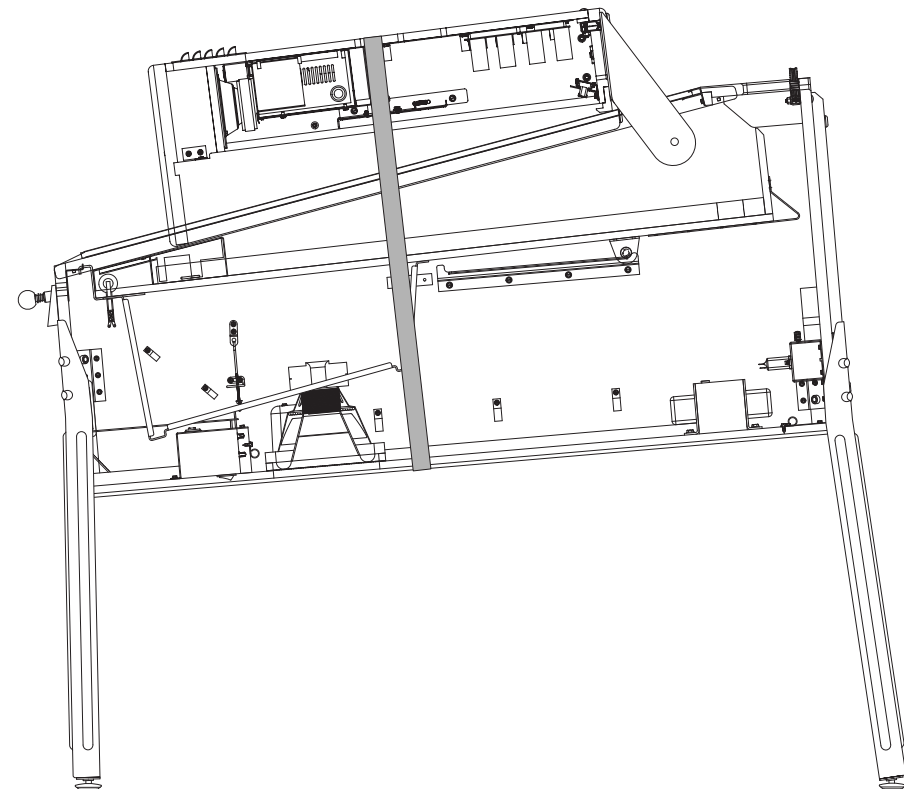


Figure A16. Transport game with the backbox lowered and secured.



**19)** A bubble level (figure A17) is attached to the playfield's right woodrail, next to the ball shooter lane, to indicate the optimal pitch of the playfield (back-to-front) for game-play. Adjust the levelers and tightening nuts on the game's four legs until the top of the bubble in the level is just touching the second reference line, as shown in figure A17. This will provide a playfield pitch angle of 6.5°.

**Note:** Ensure that the playfield remains level, side-to-side, as you adjust its pitch.

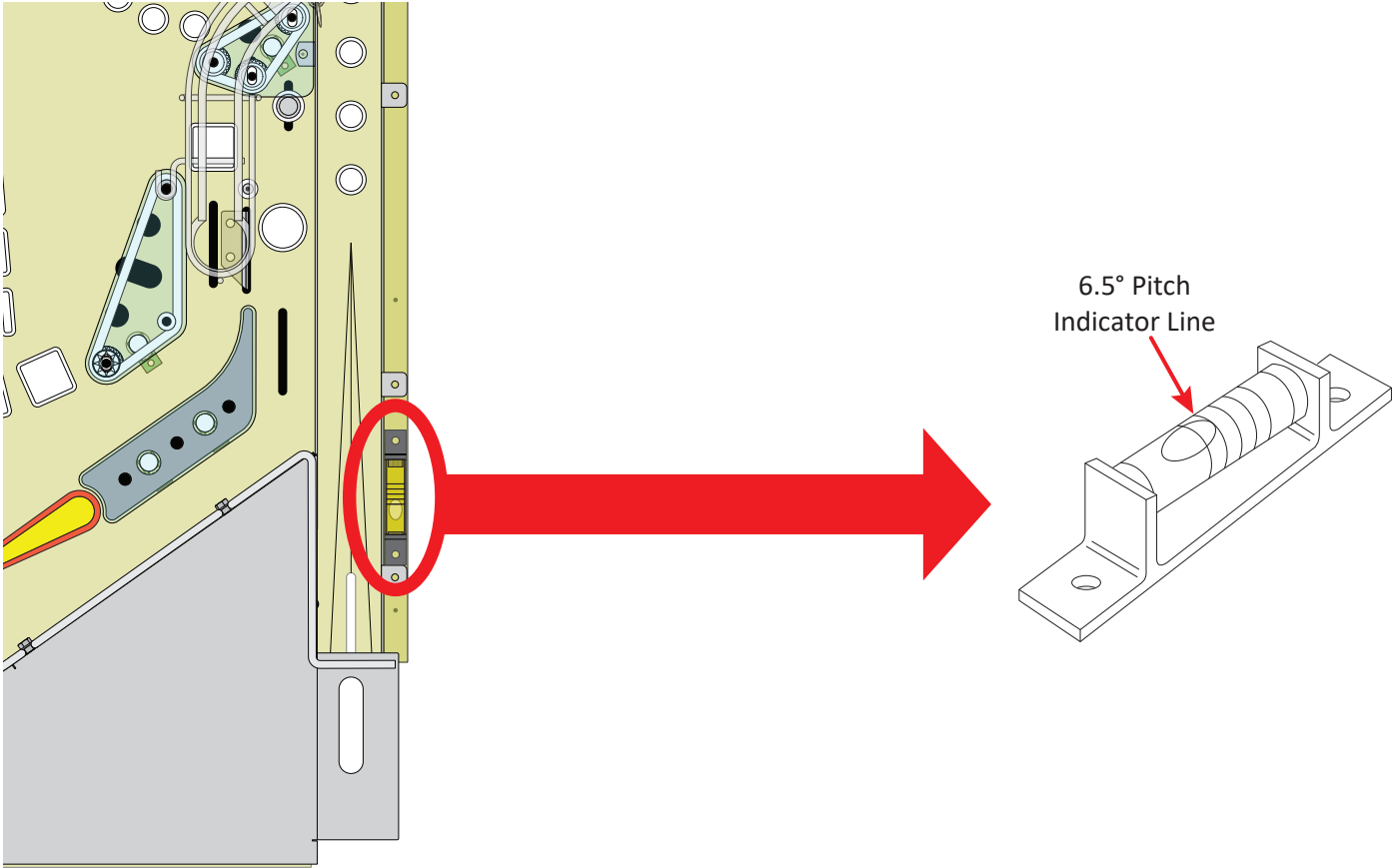
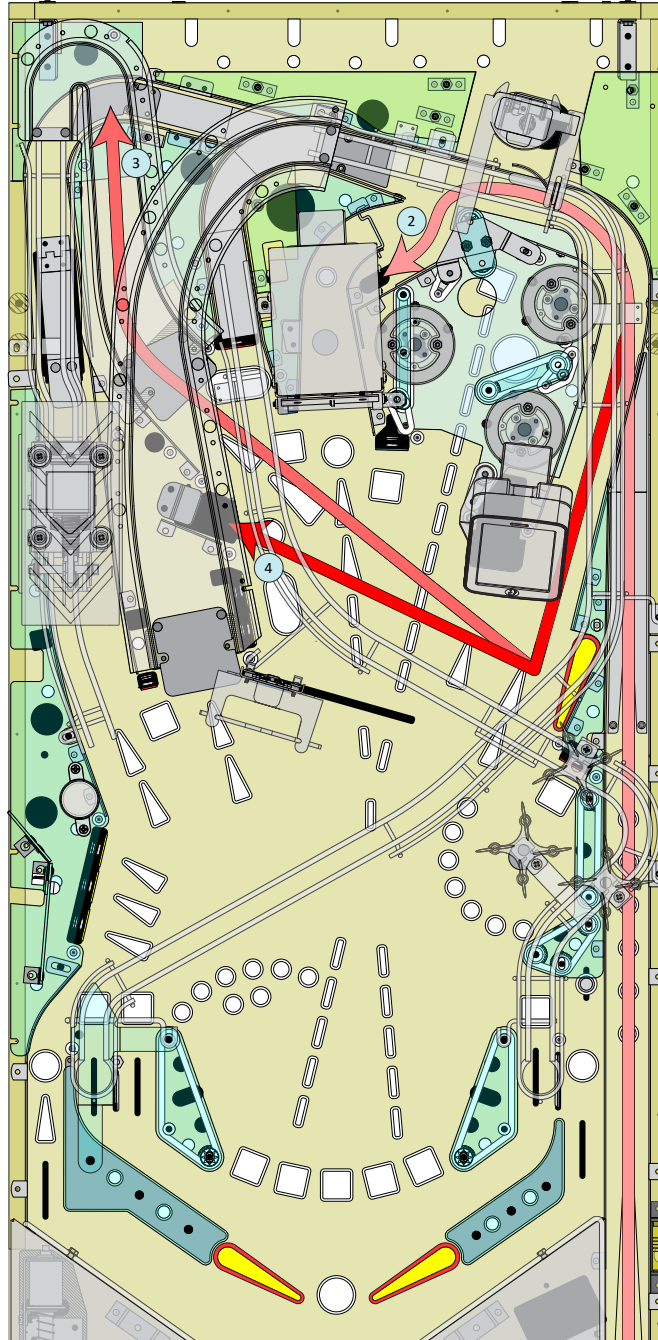


Figure A17. Playfield pitch bubble level.



## A.2 Dialed In Rules & Shot Maps

### Skill Shots

**1)** As you prepare to plunge the ball, the inserts in the shooter lane (**Big Points, Hold Drones, Hold Kilowatts, Hold Transit, Hold Bonus X, Hold Spider**) will be continuously cycling. A bonus will be awarded, corresponding to the insert that is lit when the plunged ball enters play. Hint: Skill shot awards are not all necessarily equal!

For **Big Points**, the player instantly receives a points award.

For **Hold Bonus X**, the player's Bonus multiplier is immediately increased.

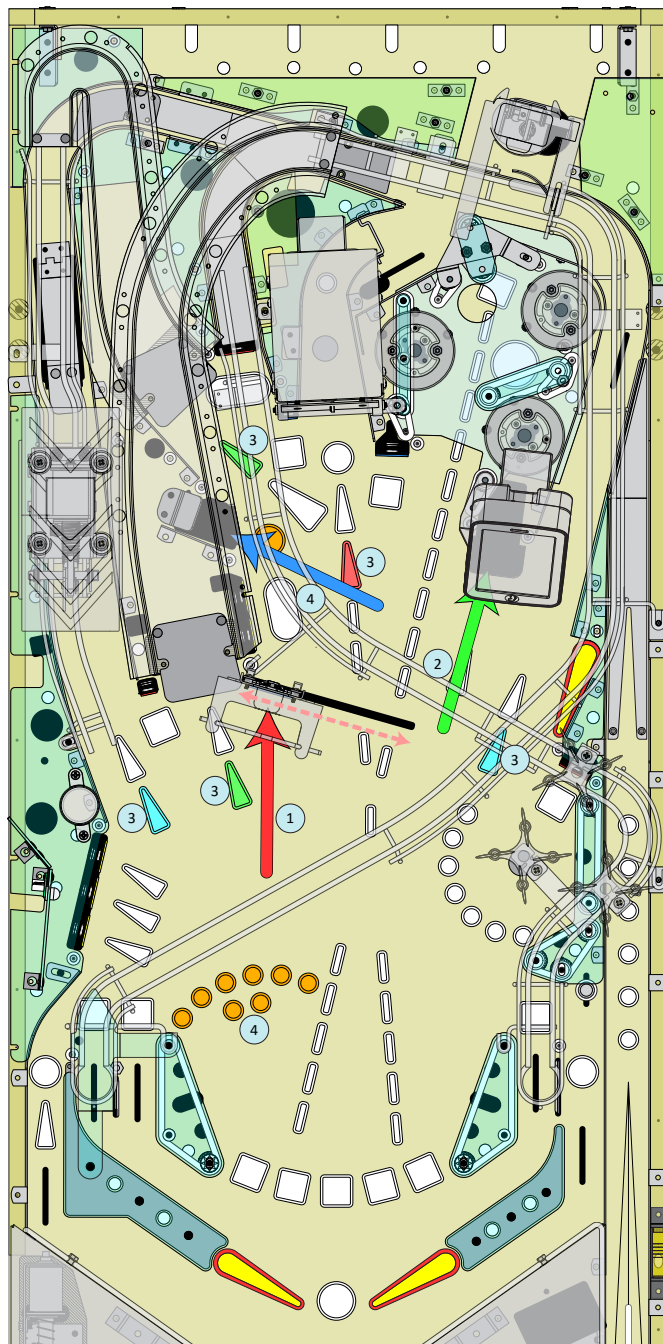
For **Hold Drones, Hold Kilowatts, Hold Transit, & Hold Spider**, a hold-over bonus is awarded for the next ball. For example, **Hold Spider** holds the final Spider value achieved during the current ball over to the next ball as the beginning Spider value.

**2)** Plunge the ball with medium strength to send the ball toward the top of the playfield. If you are able to drop it into the inline kicker slot, behind the **Quantum Theater**, a Skill Shot is awarded.

**3)** If you make the Skill Shot, the ball will be kicked back down the right orbit, feeding the upper right flipper. This gives you the opportunity to "upgrade" your Skill Shot by attempting a difficult follow-up shot. The first of these is the Super Skill Shot, awarded for shooting the ball up the upper left (**STATION 3**) ramp.

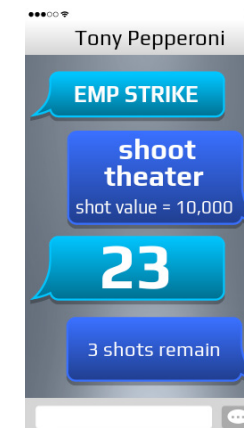
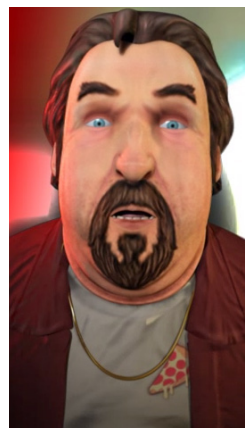
**4)** Alternatively, make the first Skill Shot, then wait for the ball to be kicked out to the upper right flipper. Shoot the ball into the **SIM Card** scoop to earn the Super Duper Skill Shot award.

The award values increase with each Skill Shot, Super Skill Shot and Super Duper Skill Shot made during a game, so *attempt them every time you launch a new ball into play!*

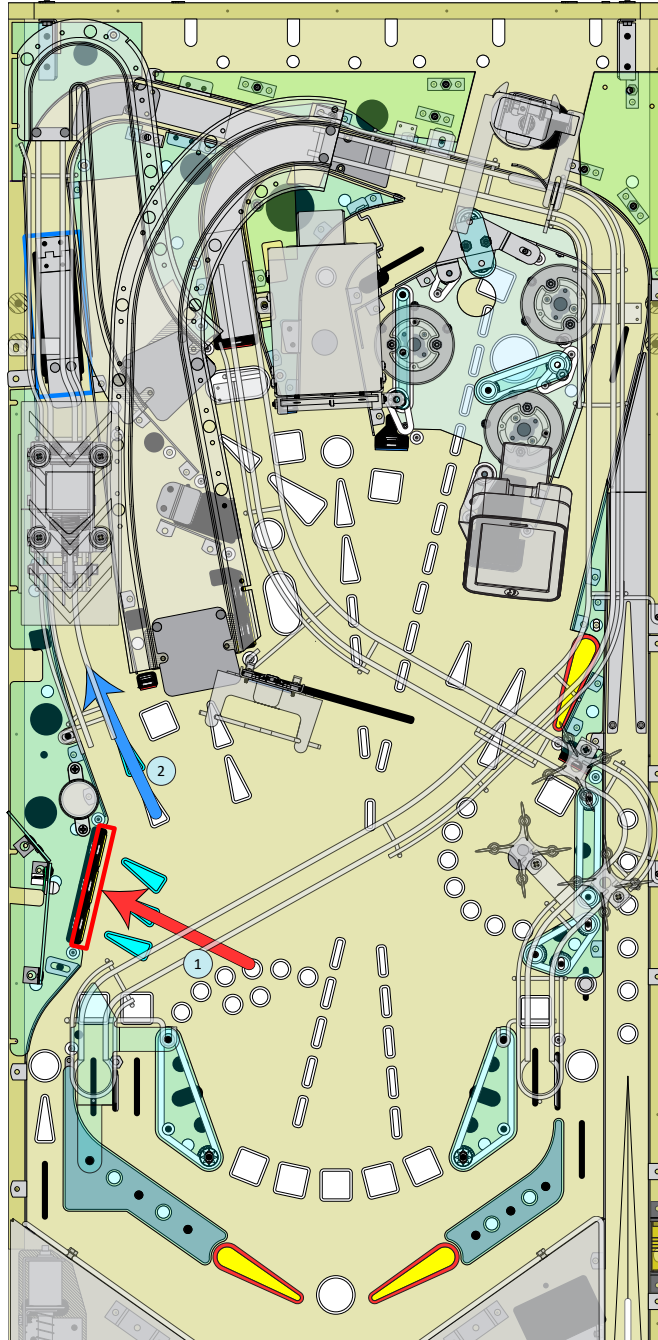


## Disaster Modes

- 1) Hit the moving QED character target in the middle of the playfield (red arrow, opposite) to charge up the smartphone. With each hit, you will see the phone battery indicator filling up.
- 2) When the Smartphone is fully charged, its screen frame will flash green. Shoot the Smartphone scoop (green arrow, opposite) to begin a Disaster Mode. A character will call you on the smartphone (below, left) as the mode begins on the main display (below, center). The Smartphone screen will provide shot cues and display the timer (below, right) as you attempt to complete the mode.
- 3) Shoot the lit (flickering multi-color) arrow shots to complete the Disaster Mode.
- 4) When you've finished the Disaster Mode, the **SIM Card** insert will light up. Use the upper right flipper to shoot the **SIM Card** scoop (blue arrow, opposite) to collect the card; a **D-I-A-L-E-D I-N** letter will be awarded and your Smartphone will receive an upgrade.
- 5) Repeat the above steps to begin more Disaster Modes, finish them and collect additional **SIM Cards** (**D-I-A-L-E-D I-N** letters) and utilize the full potential of your Smartphone. Playing three Disaster Modes will light an Extra Ball shot into Crazy Bob's Trap Door (left orbit).



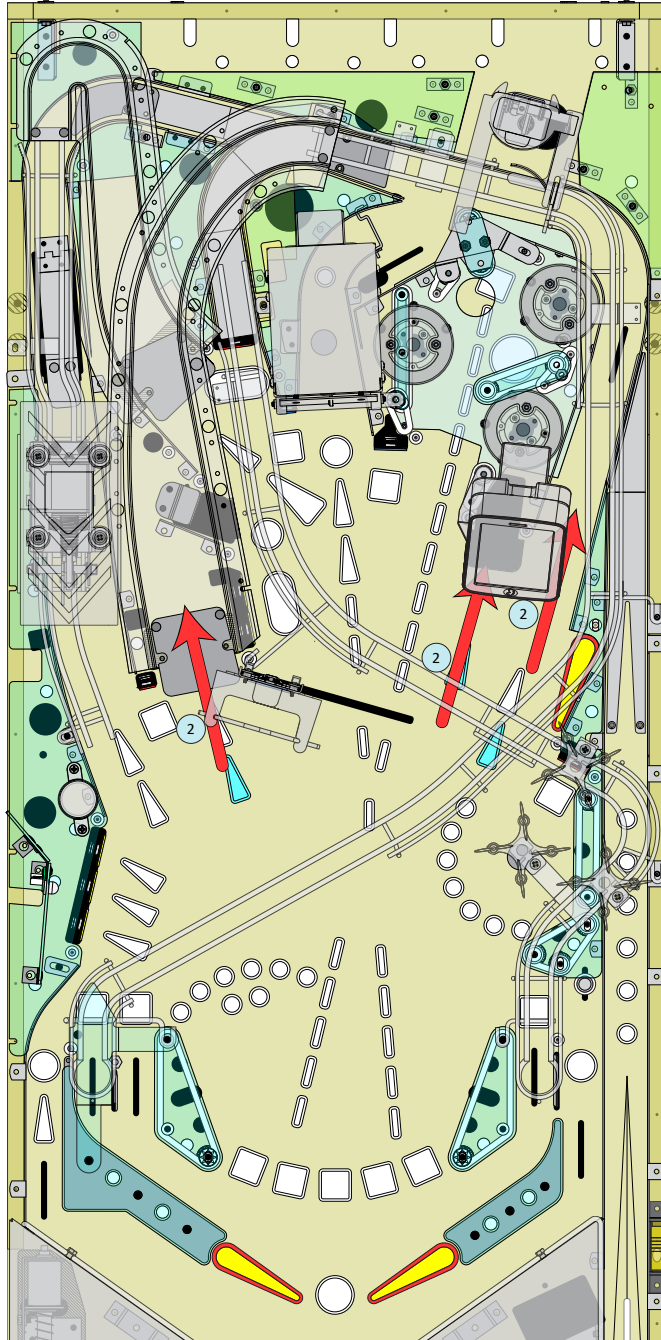




## Crazy Bob's Modes - Qualifying & Beginning

- 1) Hit the yellow **B-O-B** targets (red arrow & box, opposite) to relight the **Kickback** and qualify Crazy Bob's Modes and Multiballs.
- 2) When the three **B-O-B** targets have been completed, the left orbit **BOB** insert will light, indicating that Crazy Bob's Trap Door (blue box, opposite) is open. Shoot the ball into the trap door, up the left orbit (blue arrow, opposite), for a Crazy Bob Award.
- 3) The first time you complete the **B-O-B** targets and shoot Crazy Bob's Trap Door, one of three modes will begin: Emoji Overload, Selfie Time or Lottery Frenzy. The second time, you are awarded a Bonus X increase (the main display will show the image below). The third time, one of three two-ball Crazy Bob Multiballs will begin: Drones Gone Wild Multiball, High Voltage Multiball or Monkey Wrench Multiball.

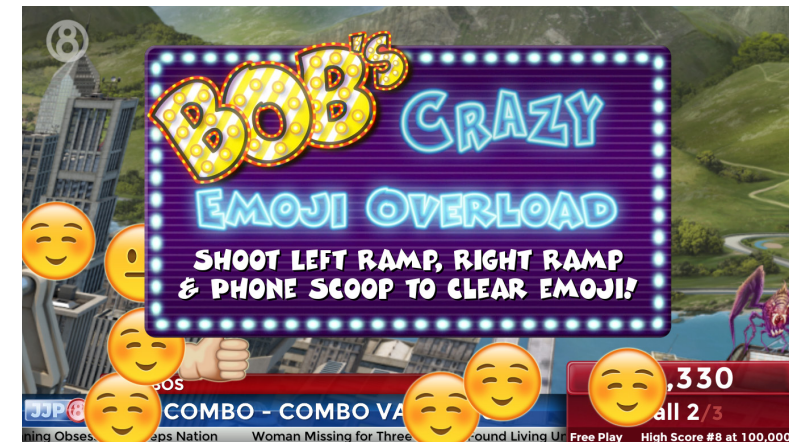




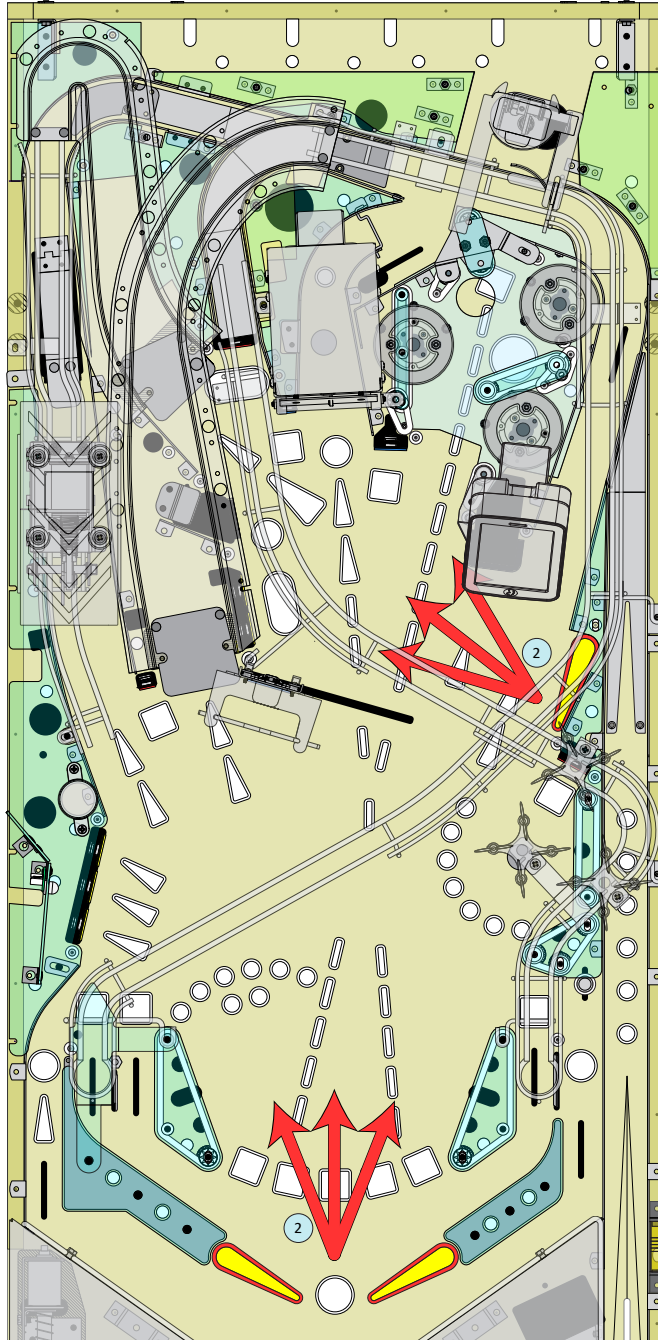
## Crazy Bob's Modes - Emoji Overload

**1)** When Crazy Bob's Emoji Overload begins, the main display will show the image below, right. Over time, emoji will begin to appear, in groups, on the main display and the Smartphone screen (below, left).

**2)** Shoot the left ramp, the Smartphone scoop and the right orbit/ramp (red arrows, opposite) to clear a few of the emoji from the screen(s). Continue making shots to keep the screen(s) from getting overrun!





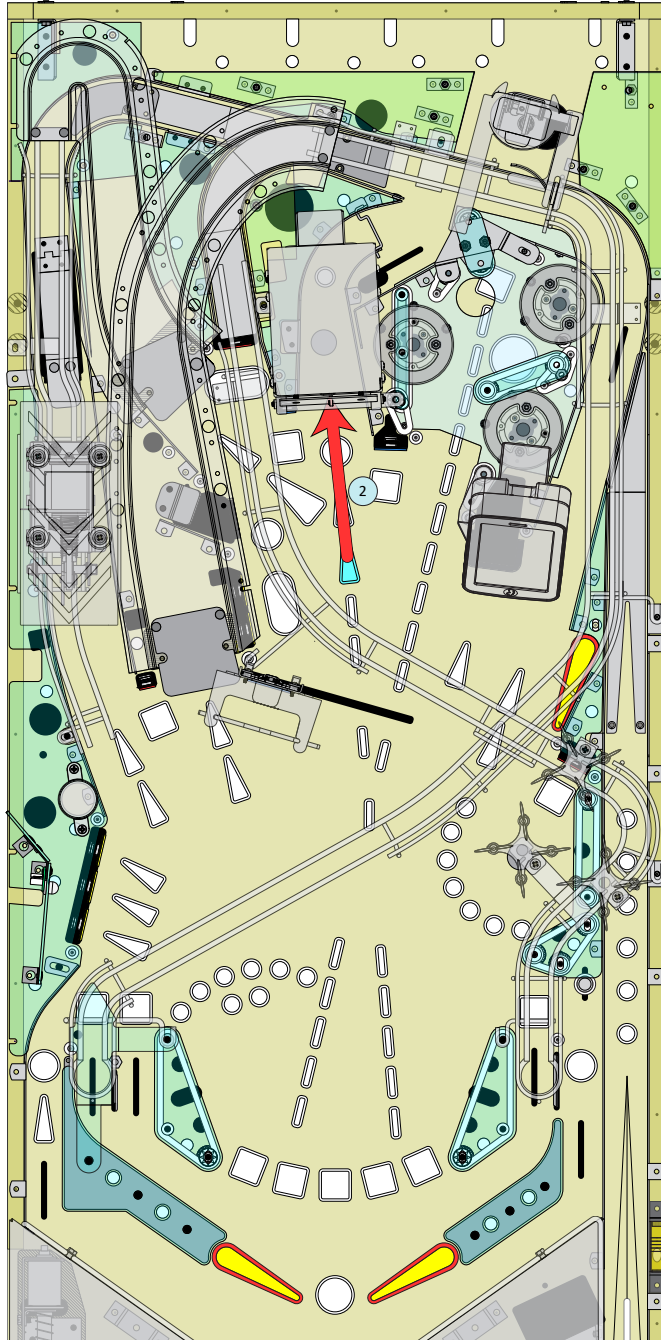


## Crazy Bob's Modes - Selfie Time

- 1) When Crazy Bob's Selfie Time begins, the main display will show the image below. A 30 second timer will appear in the upper right corner of the display and begin counting down.
- 2) Hit **any** playfield switch to trigger a selfie shot and score points. Each selfie will be "tossed" up onto the main display; see how many you can take in 30 seconds. Make faces when the playfield LEDs flash or photo bomb your opponent!





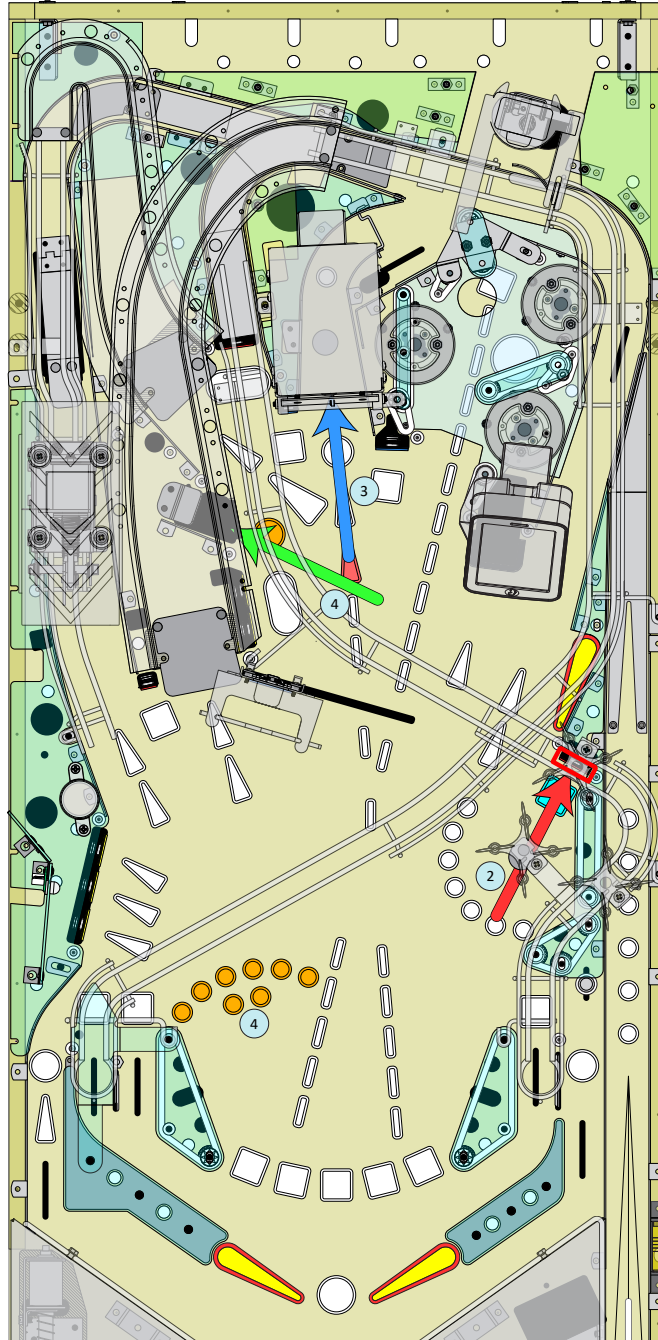


## Crazy Bob's Modes - Lottery Frenzy

- 1) When Crazy Bob's Lottery Frenzy begins, the main display will show the image below, top. A 30 second timer will appear in the upper right corner of the display and begin counting down.
- 2) When you see a lottery ticket appear in the **Quantum Theater** (bottom, left), shoot it (red arrow, opposite) to bring it up on the main display (bottom, right). Wave your hand back and forth at the camera in the backbox to "scratch off" the gray film and reveal your award! See how many tickets you can shoot, scratch and collect in 30 seconds!



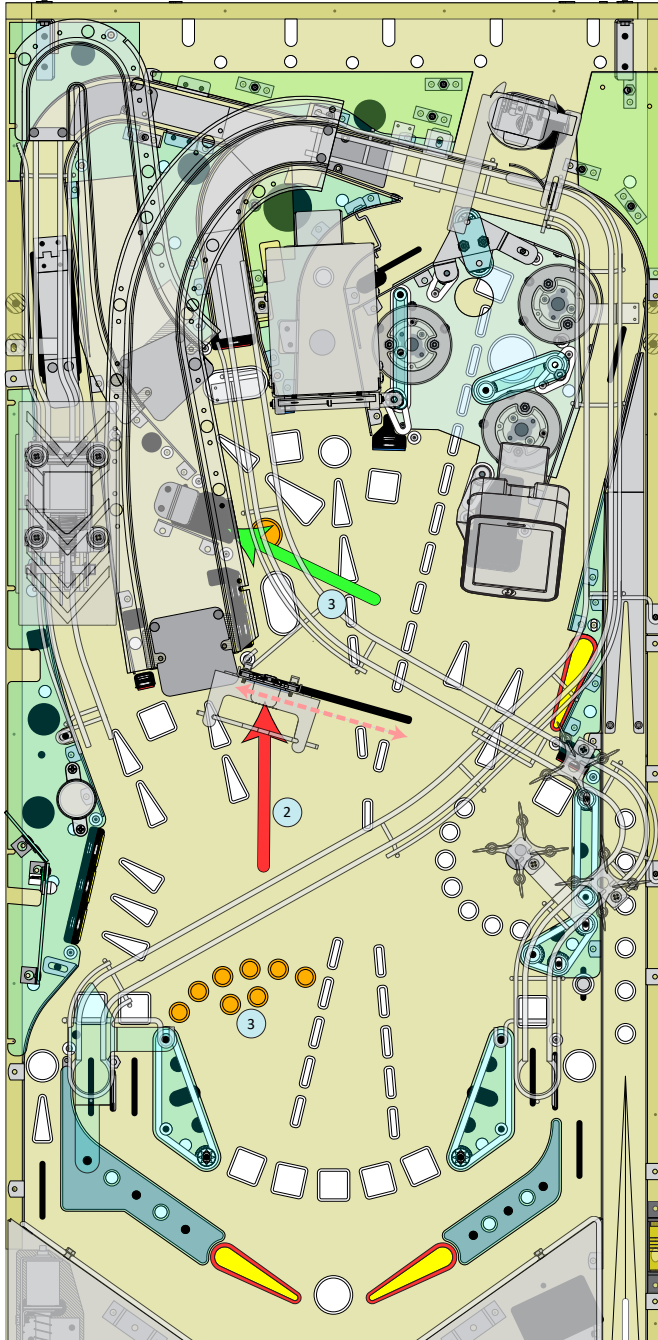




## Crazy Bob's Drones Gone Wild Multiball

- 1) When Crazy Bob's Drones Gone Wild Multiball begins, the main display will show the image below, left. Drones Gone Wild is a 2-ball multiball.
- 2) During multiball, shoot the red drone stand-up target (red arrow, opposite) to collect Jackpots.
- 3) Once a Jackpot is collected, one of ten "familiar" objects will appear in the **Quantum Theater** (below, center). Shoot the theater (blue arrow, opposite) to collect the object - and a Super Jackpot (below, right)! Collect three Super Jackpots to light the **SIM Card**.
- 4) Use the upper right flipper to shoot the **SIM Card** scoop (green arrow, opposite) and collect the card; a **D-I-A-L-E-D I-N** letter will be awarded and your Smartphone will receive an upgrade.
- 5) Scores for the Crazy Bob Multiball Champs are kept and displayed on the main screen during attract mode, so collect as many objects (Super Jackpots) as you can - you could be the new Drones Gone Wild Champ!



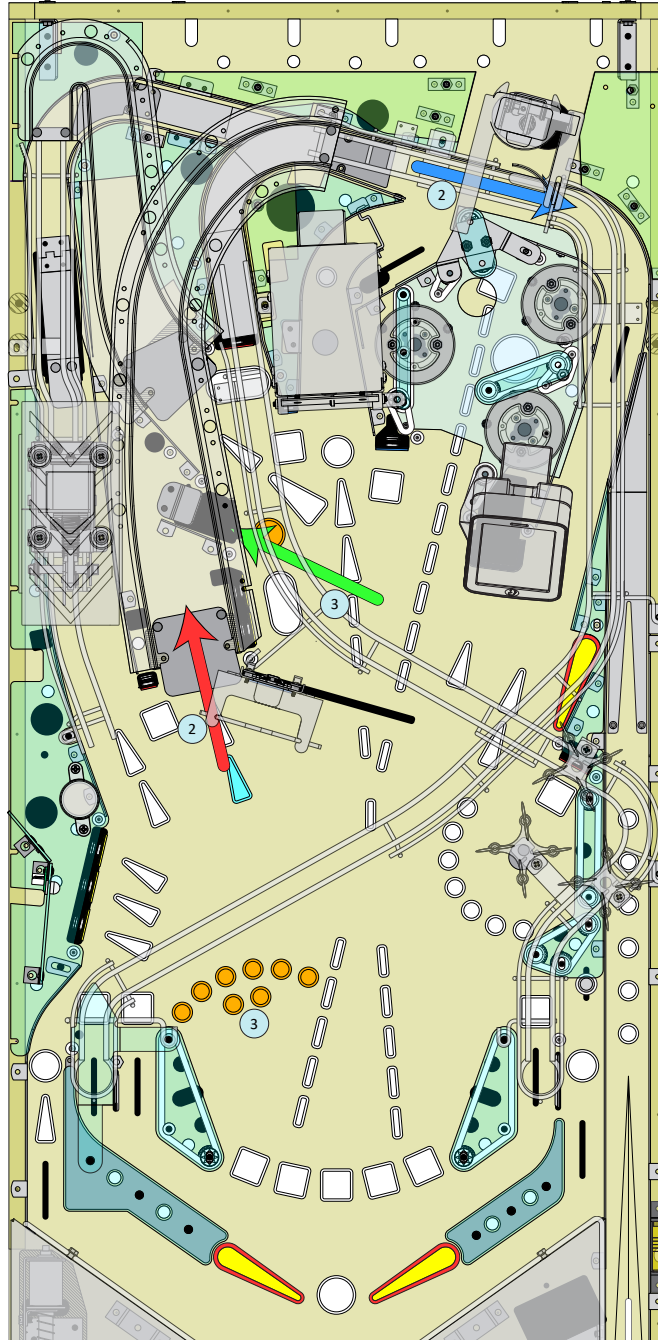


## Crazy Bob's High Voltage Multiball

- 1) When Crazy Bob's High Voltage Multiball begins, the main display will show the image below. High Voltage is a 2-ball multiball.
- 2) During multiball, shoot the moving QED character target in the middle of the playfield (red arrow, opposite) to collect Jackpots. Collect 15 Jackpots to light the **SIM Card**.
- 3) Use the upper right flipper to shoot the **SIM Card** scoop (green arrow, opposite) and collect the card; a **D-I-A-L-E-D I-N** letter will be awarded and your Smartphone will receive an upgrade.
- 4) Scores for the Crazy Bob Multiball Champs are kept and displayed on the main screen during attract mode, so collect as many QED hits (Jackpots) as you can - you could be the new High Voltage Champ!







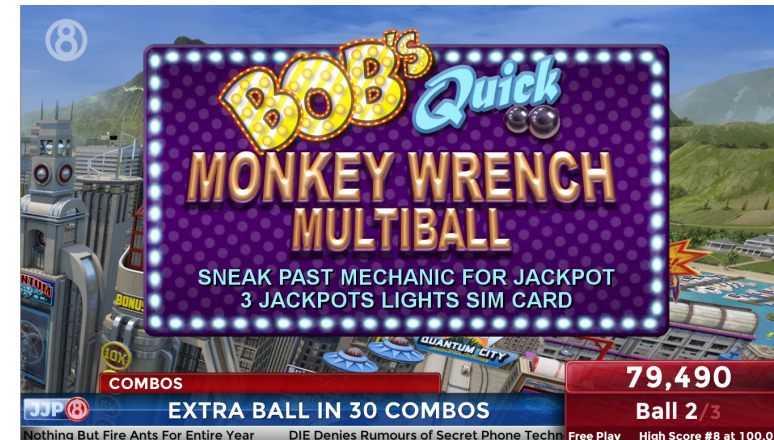
## Crazy Bob's Monkey Wrench Multiball

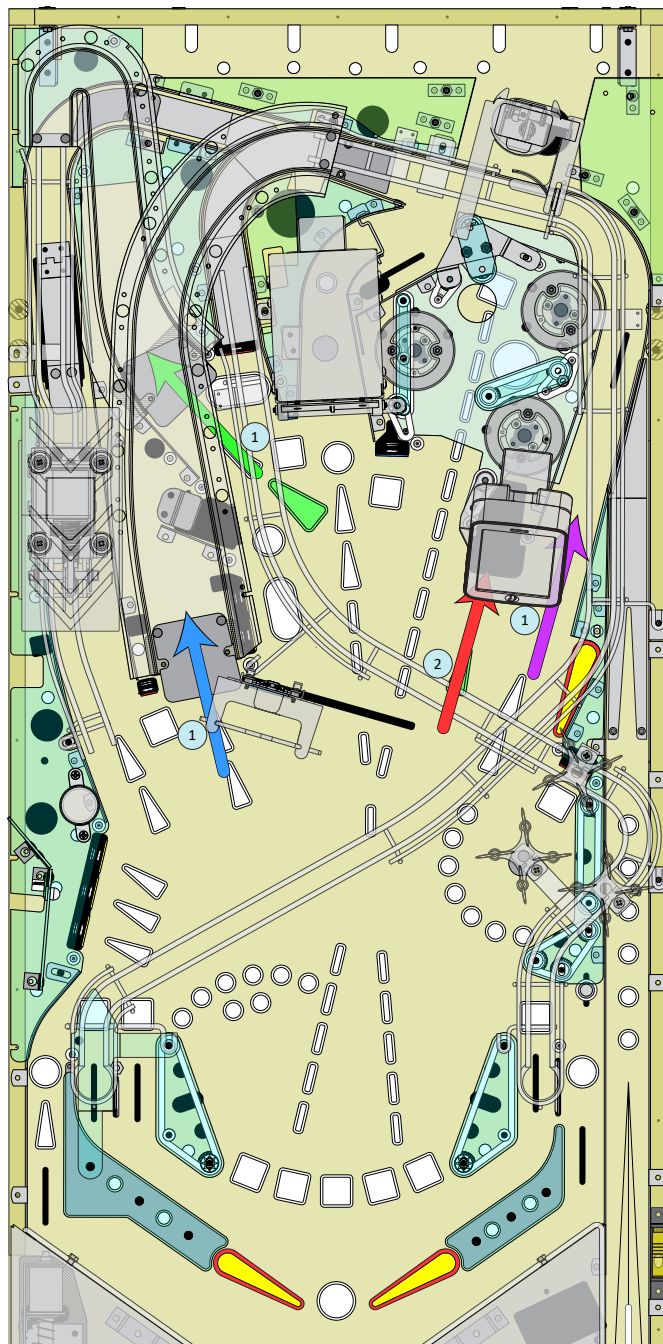
1) When Crazy Bob's Monkey Wrench Multiball begins, the main display will show the image below. Monkey Wrench is a 2-ball multiball.

2) During multiball, shoot the left ramp (red arrow, opposite) and sneak the ball under Betty, the mechanic's diverter arm (blue arrow, opposite) to collect Jackpots. Collect three Jackpots to light the **SIM Card**.

3) Use the upper right flipper to shoot the **SIM Card** scoop (green arrow, opposite) and collect the card; a **D-I-A-L-E-D I-N** letter will be awarded and your Smartphone will receive an upgrade.

4) Scores for the Crazy Bob Multiball Champs are kept and displayed on the main screen during attract mode, so collect as many passes under the diverter arm (Jackpots) as you can - you could be the new Monkey Wrench Champ!





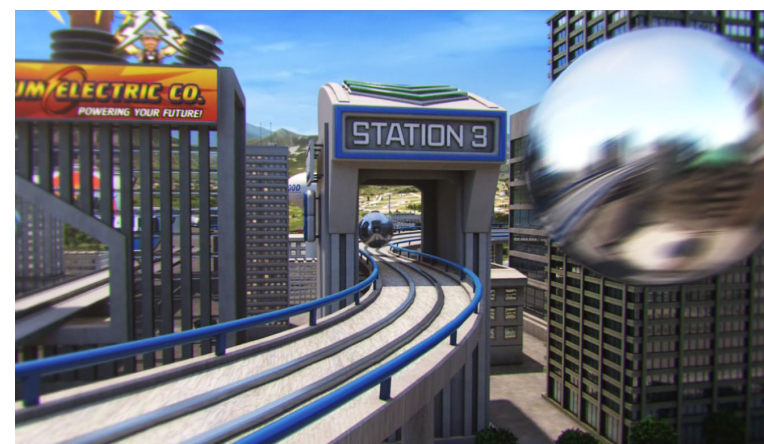
## Under Attack Multiball - Qualifying & Beginning

**1)** To qualify Under Attack Multiball, first shoot the **TRAIN 1** (left) ramp (blue arrow, opposite). Next, shoot the **TRAIN 2** (right) ramp/orbit (violet arrow, opposite). These shots light **LOCK** on the **STATION 3** (upper left) ramp. Use the upper right flipper to shoot the upper left ramp (green arrow, opposite) to lock a ball in **STATION 3**; this series of shots qualifies a 2-ball multiball.

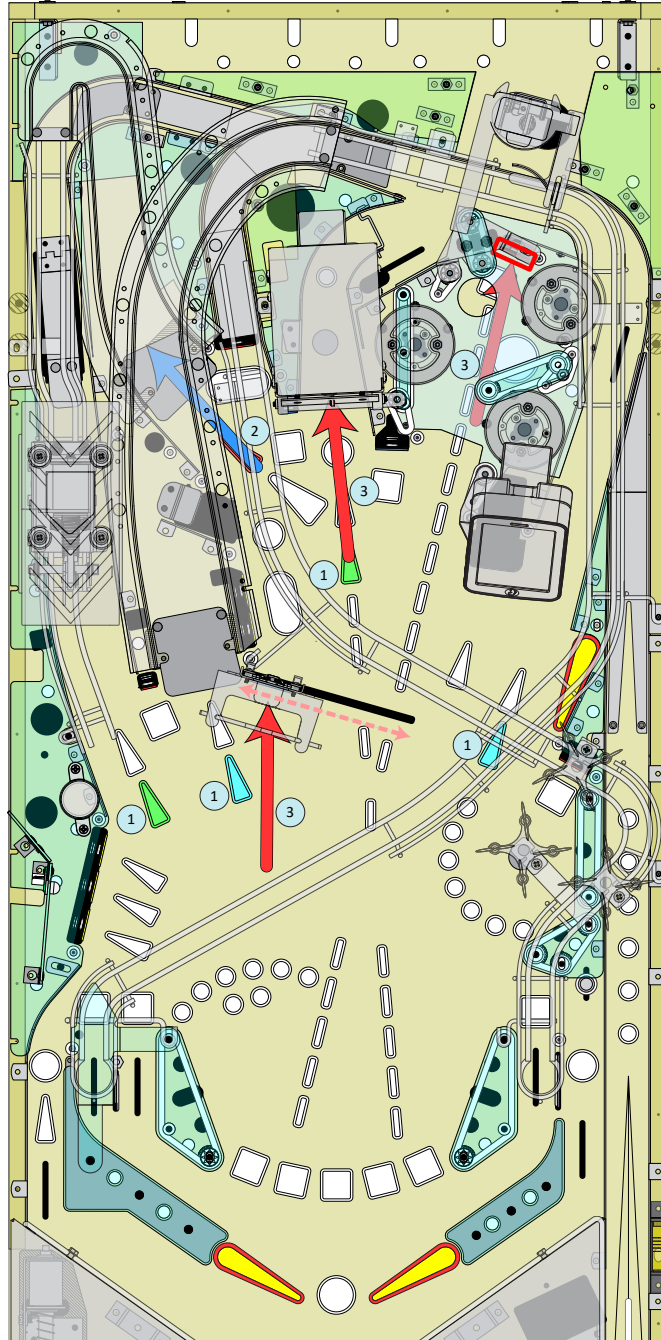
Repeat this series of ramp shots to lock a second ball in **STATION 3** and qualify a 3-ball multiball.

Note: If enabled in the Game Settings menu, the first ball for this multiball can be locked via Crazy Bob's Trap Door (in the left orbit) for the first time, the first two times or the first three times you qualify and play Under Attack Multiball.

**2)** When Under Attack Multiball (2- or 3-ball) is ready, the Smartphone screen will indicate an incoming call from a mysterious source (below, left). Shoot the Smartphone scoop to begin the multiball; the main display will show the image below, right.





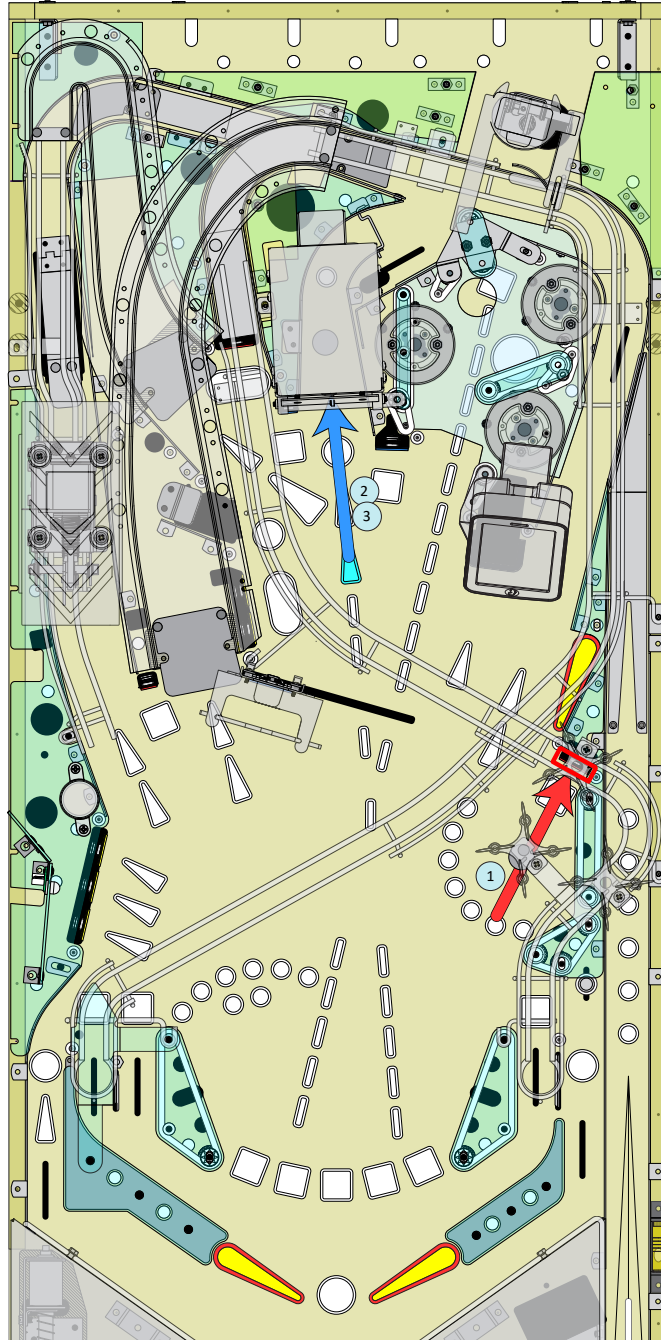


## Under Attack Multiball - Playing

- 1) During Under Attack Multiball, shoot all of the lit shots to collect Jackpots (below, top).
- 2) Use the upper right flipper to shoot the **STATION 3** (upper left) ramp and collect Double Jackpots (bottom, left).
- 3) When under attack (bottom, right), shoot the moving QED character target, the **Quantum Theater** or the Wrench stand-up target to collect a Super Jackpot.





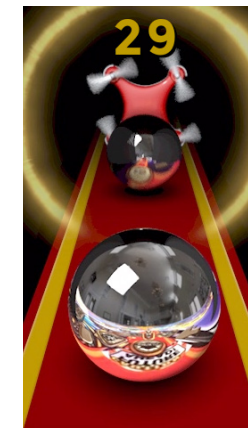
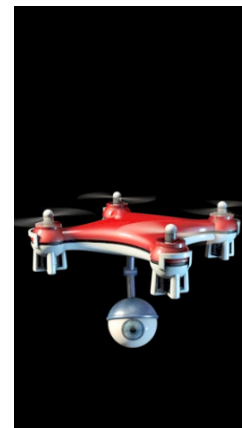


## Quantum Theater Modes - Drone Captive Ball

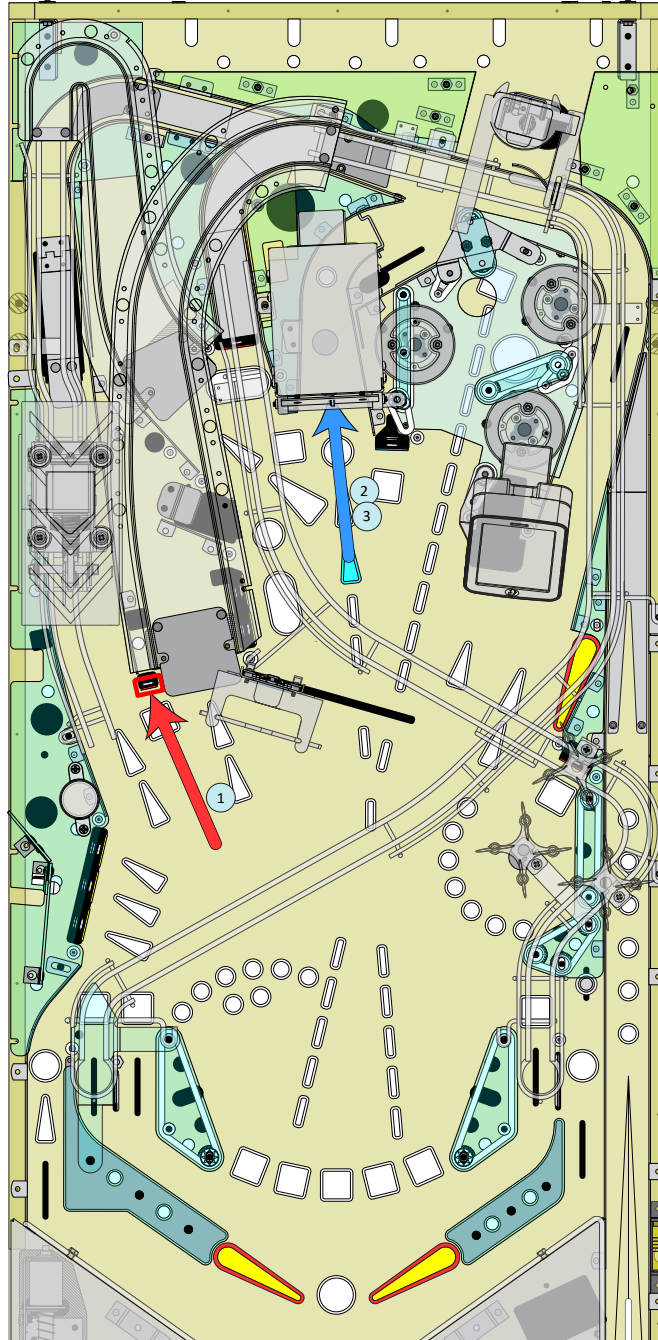
**1)** Shooting the Drone stand-up target (red arrow, opposite) will drop a virtual drone into the **Quantum Theater** (bottom, first) for a few seconds.

**2)** Shoot the **Quantum Theater** (blue arrow, opposite) to collect a Drone Bonus (bottom, second). The bonus value will increase with each successive collection.

**3)** After three virtual drones have been hit, a virtual Drone Captive Ball will appear in the **Quantum Theater** (bottom, third) for 30 seconds; the main display will show the image below, top. Shoot the **Quantum Theater** (blue arrow, opposite), kick the captive ball (bottom, fourth), and see how many Drone Bonuses you can collect!

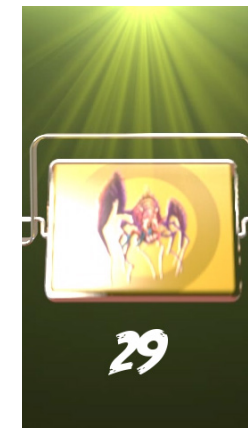


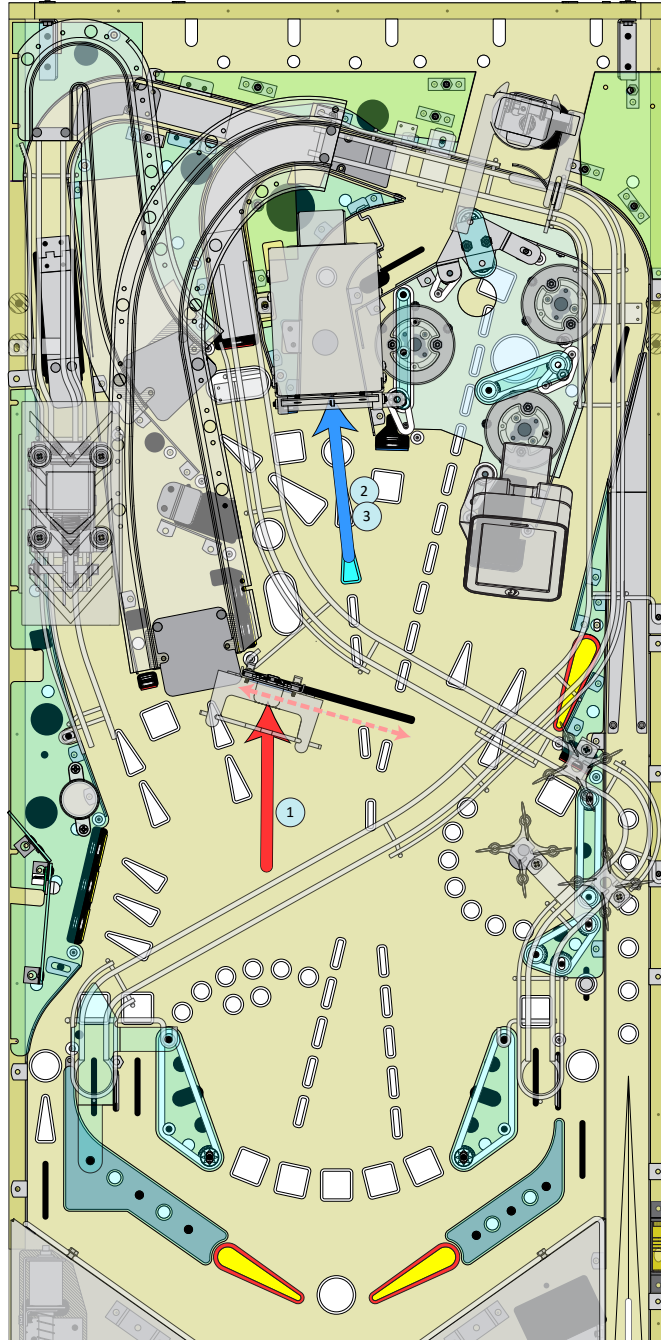




## Quantum Theater Modes - Spider Spinner

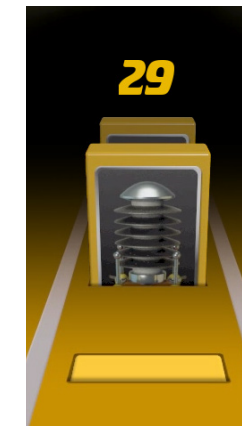
- 1) Shooting the Spider stand-up target (red arrow, opposite) will drop a virtual spider into the **Quantum Theater** (bottom, first) for a few seconds.
- 2) Shoot the **Quantum Theater** (blue arrow, opposite) to collect a Spider Bonus (bottom, second). The bonus value will increase with each successive collection.
- 3) After three virtual spiders have been hit, a virtual Spider Spinner will appear in the **Quantum Theater** (bottom, third) for 30 seconds; the main display will show the image below, top. Shoot the **Quantum Theater** (blue arrow, opposite), spin the spinner (bottom, fourth), and see how many Spider Bonuses you can collect!



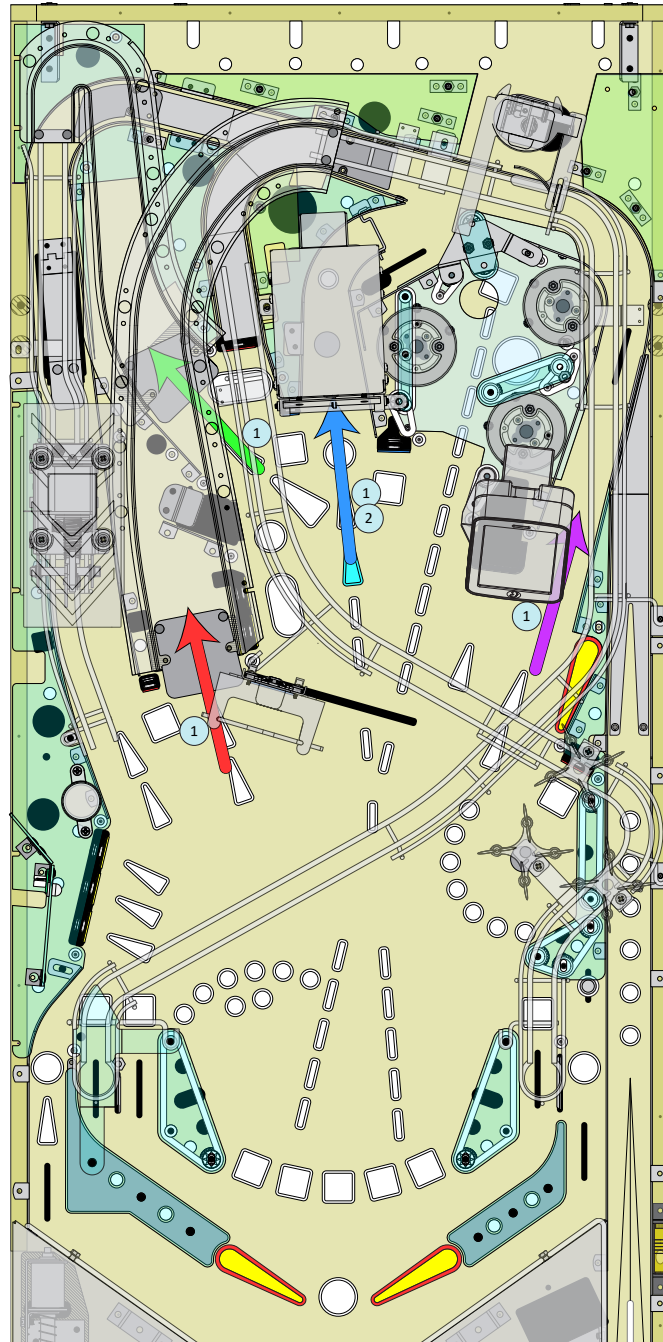


## Quantum Theater Modes - Kilowatt Drop Targets

- 1) Shooting the QED moving target (red arrow, opposite) will drop a virtual kilowatt tower into the **Quantum Theater** (bottom, first) for a few seconds.
- 2) Shoot the **Quantum Theater** (blue arrow, opposite) to collect a Kilowatt Bonus (bottom, second). The bonus value will increase with each successive collection.
- 3) After three virtual kilowatt towers have been hit, a trio of virtual, inline Kilowatt Drop Targets will appear in the **Quantum Theater** (bottom, third) for 30 seconds; the main display will show the image below, top. Shoot the **Quantum Theater** (blue arrow, opposite), knock down the targets (bottom, fourth), and see how many Kilowatt Bonuses you can collect!

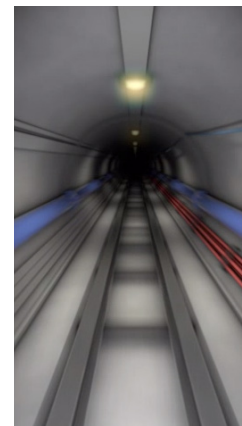


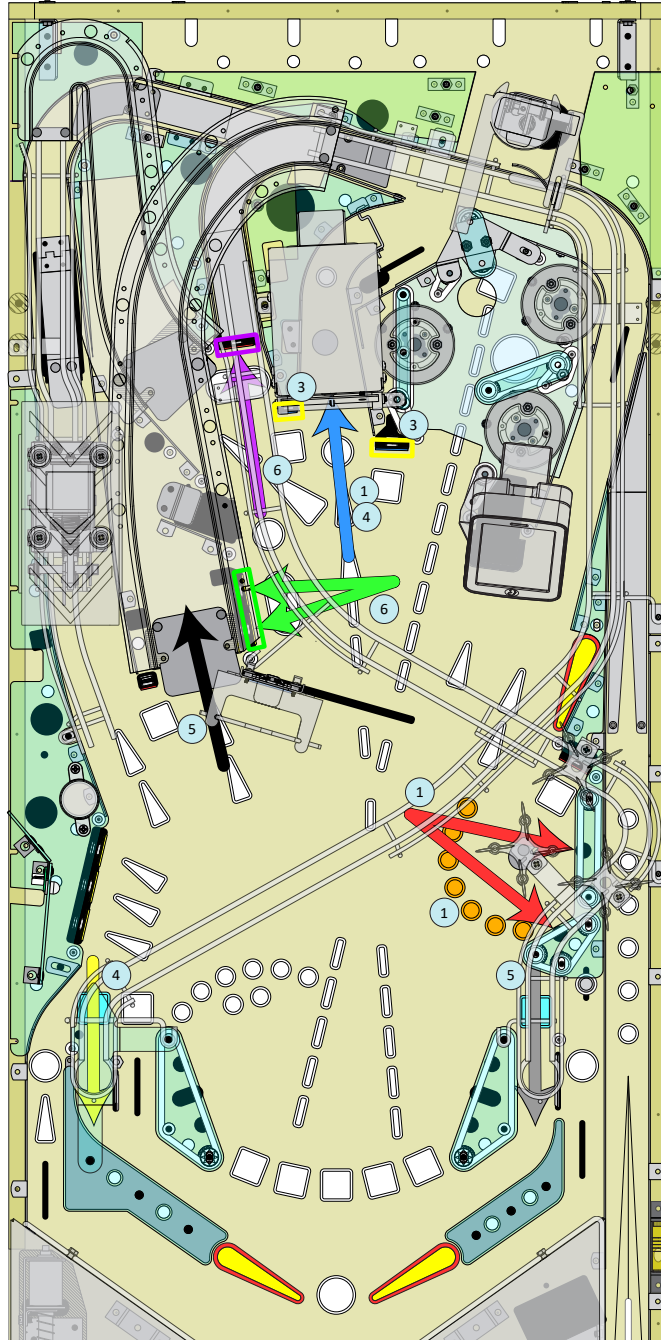




## Quantum Theater Modes - Train Bash Target

- 1)** Shooting the **TRAIN 1** (left) ramp (red arrow, opposite) or the **TRAIN 2** (right) ramp/orbit (violet arrow, opposite), followed by an immediate (combo) shot to the **Quantum Theater** (blue arrow, opposite) or a single shot up the upper left (**TRAIN 3**) ramp (green arrow, opposite) will bring up a virtual train tunnel to in the **Quantum Theater** (bottom, first) for a few seconds.
- 2)** Shoot the **Quantum Theater** (blue arrow, opposite) to collect a Transit Bonus (bottom, second). The bonus value will increase (and the STATION sign number will count down) with each successive collection.
- 3)** After three Transit Bonuses have been collected, a virtual Train Door Bash Target will appear in the **Quantum Theater** (bottom, third) for 30 seconds; the main display will show the image below, top. Shoot the **Quantum Theater** (blue arrow, opposite), bash through the doors (bottom, fourth), and see how many Transit Bonuses you can collect!





## Mystery Awards & Other Cool Features!

**1)** Hit the Drone rubber switches (red arrows, opposite) to advance (light) the drone **Package Delivery Progress** inserts. When all seven **Package Delivery Progress** inserts are lit, a virtual box target will parachute into the **Quantum Theater**. Shoot the **Quantum Theater** (blue arrow, opposite), break open the box, and collect a cool mystery award. The box will remain in the theater until collected (even into the next ball, if necessary!).

**2)** When you hit one of the major shots on the game, a group of "next shot", yellow-colored inserts will light up on the playfield for a short period of time. Hit one of those shots before the timer runs out to complete a combo shot. Another group of "next shot inserts will light up yellow; hit one of those shots to extend your combo shot.

Initials for the player with the longest continuous combo shot are kept and displayed on the main screen during attract mode, so shoot as many consecutive combo shots as you can - you could be the new Combo Champ!

The total number of independent combo shots (at least two designated shots, in rapid succession) is also tracked. If you are able to hit 35 total combo shots in a game, an Extra Ball shot into Crazy Bob's Trap Door (in the left orbit) will be lit.

**3)** Spotting the two blue **TIC** and **KET** stand-up targets (yellow boxes, opposite), on either side of the **Quantum Theater** entrance, qualifies the flipper return lane hurry-up features. The left side **HURRY UP** insert will light. Flipper usage will alternate the light between the left side **HURRY UP** insert and the right side **10K+** insert.


**4)** If the ball goes through the first left flipper return lane and the **Hurry Up** insert is lit (yellow arrow, opposite), a points countdown hurry-up begins in the **Quantum Theater**. Shoot the **Quantum Theater** (blue arrow, opposite) to collect the hurry-up bonus. The quicker you make the shot, the more points you'll score!

**5)** If the ball goes through the right flipper return lane and the **10K+** insert is lit (gray arrow, opposite), a short hurry-up timer begins for the left ramp. Shoot the left ramp (black arrow, opposite), before the timer runs out, to collect the hurry-up 10K-point bonus. When the shot is made, the hurry-up timer begins again. If you're able to shoot the left ramp again, before time runs out, you will be awarded a 11K-point bonus. This process can be repeated, indefinitely (12K, 13K, etc.), with a maximum bonus of 20K points.

**6)** Hit the two yellow **Lite Big Bang** targets (green arrows & box, opposite) to qualify (light) the **Big Bang!** insert. Shoot the red **Big Bang!** target (violet arrow & box, opposite) to trigger a **Big Bang!** event. When you are in a Disaster Mode, triggering a **Big Bang!** event will instantly complete the mode. During Under Attack Multiball, triggering a **Big Bang!** event will instantly collect all available Jackpots and stop any incoming attacks (awarding a Super Jackpot, in the process). During normal play, triggering a **Big Bang!** event simply awards big points.

# DIALED IN!

## RULES FLOWCHART








# Section B

## The Dialed In Menu System





# B.1 Menu System Basics

The Dialed In menu system allows the user or operator of the game to test the performance of its components and assemblies, personalize its rules and track, monitor or manage its play and/or earnings. Four pushbuttons are used to navigate the menu system, make adjustments, enter data, check components, trigger tests, etc. The buttons are located on the inside of the coin door, mounted to a bracket nearest its outside edge (circled in figure B1).

The buttons are labeled: black is **Enter**, red next to it is **Up/+** , next red is **Down/-** and green is **Back/Escape**. Each time you press a button, you will hear an audio response through the game’s speakers. Use **Enter** to enter a sub-menu, select a menu item to change or execute a command. Use **Up/+** or **Down/-** to maneuver through menu choices or increase/decrease data values for a selected menu item. Use **Back/Escape** to exit a sub-menu or escape from a selected menu item without saving changes. Each sub-menu screen contains specific instructions for button use and/or visual cues superimposed over the button illustrations in the lower left corner of the LCD screen.

To enter the menu system at any time (after system boot-up), open the coin door and momentarily press **Enter**. The main menu screen will instantly appear on the game’s LCD monitor (figure B2). The current date and time will be displayed in the lower right hand corner of the screen, along with the version of software the game is running. All of the RGB LEDs and GI/flasher LEDs in the game will light up in white to improve visibility above and below the playfield.

From the main menu screen, you can access the game's **Test Report** (if present), device/component tests, game settings, audits, utilities, presets, reports and resets. Simply move up/down in the list of menu icons, using **Up/+** and **Down/-**, then press **Enter** to select the sub-menu you’d like to access. To exit the menu system and return to game play, press **Back/Escape**. Specific details for each main menu item are included later in this section. From this screen, you can also easily jump into the **Game Presets, Difficulty Presets & Customization** menus to quickly customize your game.

Note: When the coin door is opened, the game’s safety interlock switch (the upper switch on item 4, pg C-2 of this manual) disables the 70-volt power running to the playfield. In order to activate 70-volt devices in any of the diagnostics tests, you must either close the coin door or pull the safety interlock switch’s actuator out (it will “click” and lock in place). When you close the coin door, the interlock switch actuator will be pushed back into its normal (unlocked) position. **CAUTION:** Most of the high power coils will be enabled, so slingshots, pop bumpers, VUKs and flippers (if activated by the flipper buttons) will kick a ball around as it rolls down the playfield - or fire when trigger switches are closed by any means. **So please be careful with your fingers and tools on the playfield surface! If you lift the playfield for any reason, please be careful around high power coil lugs, as they present a shock hazard!**

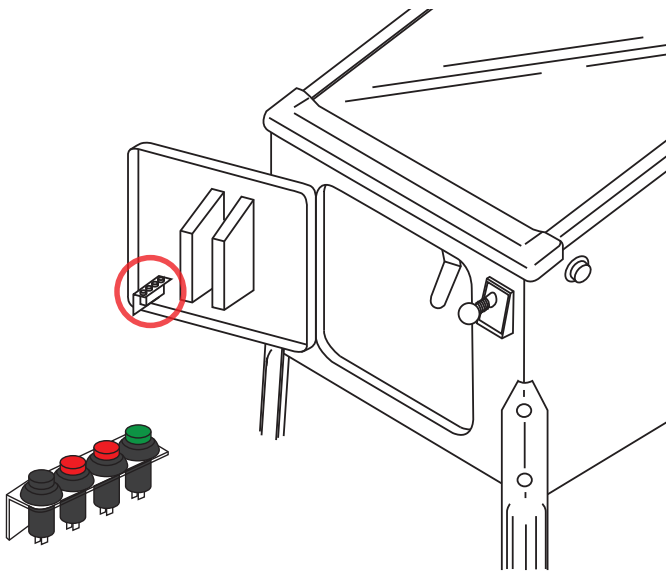


Figure B1. Menu system navigation buttons.

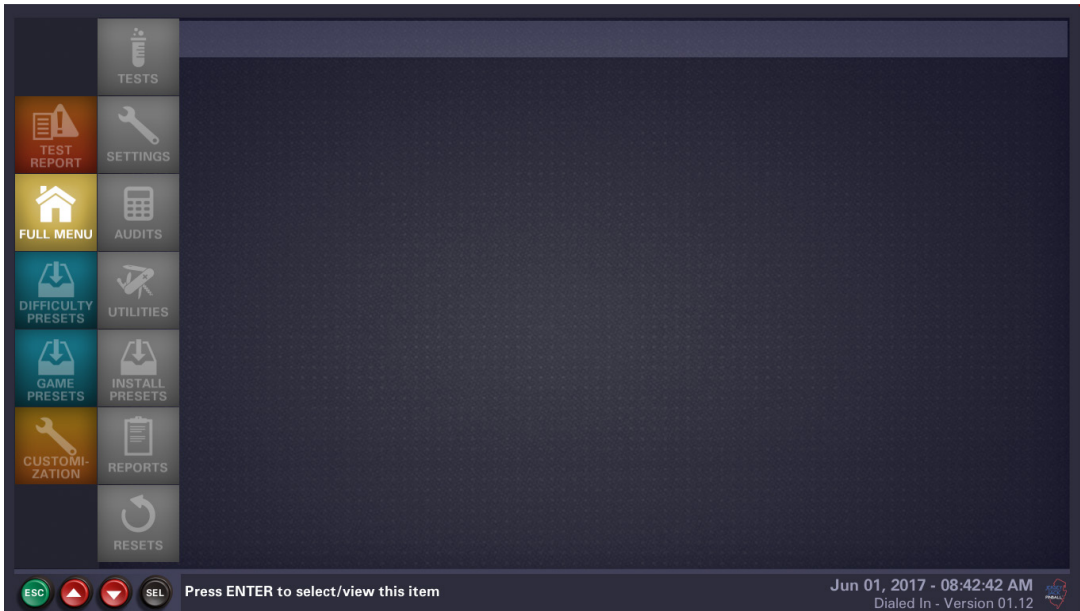


Figure B2. Dialed In menu system’s main menu screen.



# B.2 Tests

The **Tests** menu (see figure B3 for an outline) allows the user to test all major components and assemblies in the game for proper operation.

**Switch Tests** - test all matrixed or dedicated switches in the game. A screen will be displayed for the selected group (**Matrixed Switches** or **Dedicated Switches**) showing the status of every switch within the group. As you manually open or close switches, the status for each is updated on the screen and you hear an audio response through the game’s speakers. In **Single Switch** test, you can scroll through the entire list of switches and repeatedly open or close any single switch. The **Switch History** screen displays the 24 most recent inactive-to-active switch transitions.

**Coils** - test virtually any coil, magnet, motor or light in the game. A screen will be displayed, listing all of the coils, magnets, motors and lights in the game that can be energized. You can auto-cycle through the list one at a time, or repeatedly/manually trigger a single device.

**LED Tests** - test the RGB LEDs in the game (feature and GI lighting). **Ordered LED Test** - you can step through the list of RGB LEDs, one at a time, in hardware order, and test the color-producing capability of each. **Grouped LED Test** - you can step through the list of RGB LEDs, one at a time, in grouped order, and test the color-producing capability of each. **Rev Order LED Test** - basically the same as the **Ordered LED Test**, except the LEDs are listed in reverse hardware order. **All LED Test** - all LEDs (RGB and GI) will light at once, allowing you to test the color-producing capability of the entire chain at one time. **GI Only Test** - allows you to test the color-producing capability of LEDs used for GI purposes. **LED And Flash Test** - allows you to test the functionality of all CPU-controlled lighting in the game at one time.

**Display** - test the basic colors and alignment of images on the game’s LCD monitor. You can step through several fundamental colors on the screen and superimpose a grid on it to check for proper centering and alignment of displayed images.

**Sound** - test the game’s sound system for proper balance and operation with sound effects, voices, music and a wide variety of tones and sweeps.

**Device Tests** - test all of the major game devices/assemblies (**Ball Trough**, **Theater Magnet**, **Statue(Betty) Diverter**, **Moving Target**, **Camera** & **Trap Door**) for proper operation. A specific screen will be displayed for each device, allowing the user to repeatedly exercise it and ensure that it is functioning correctly.

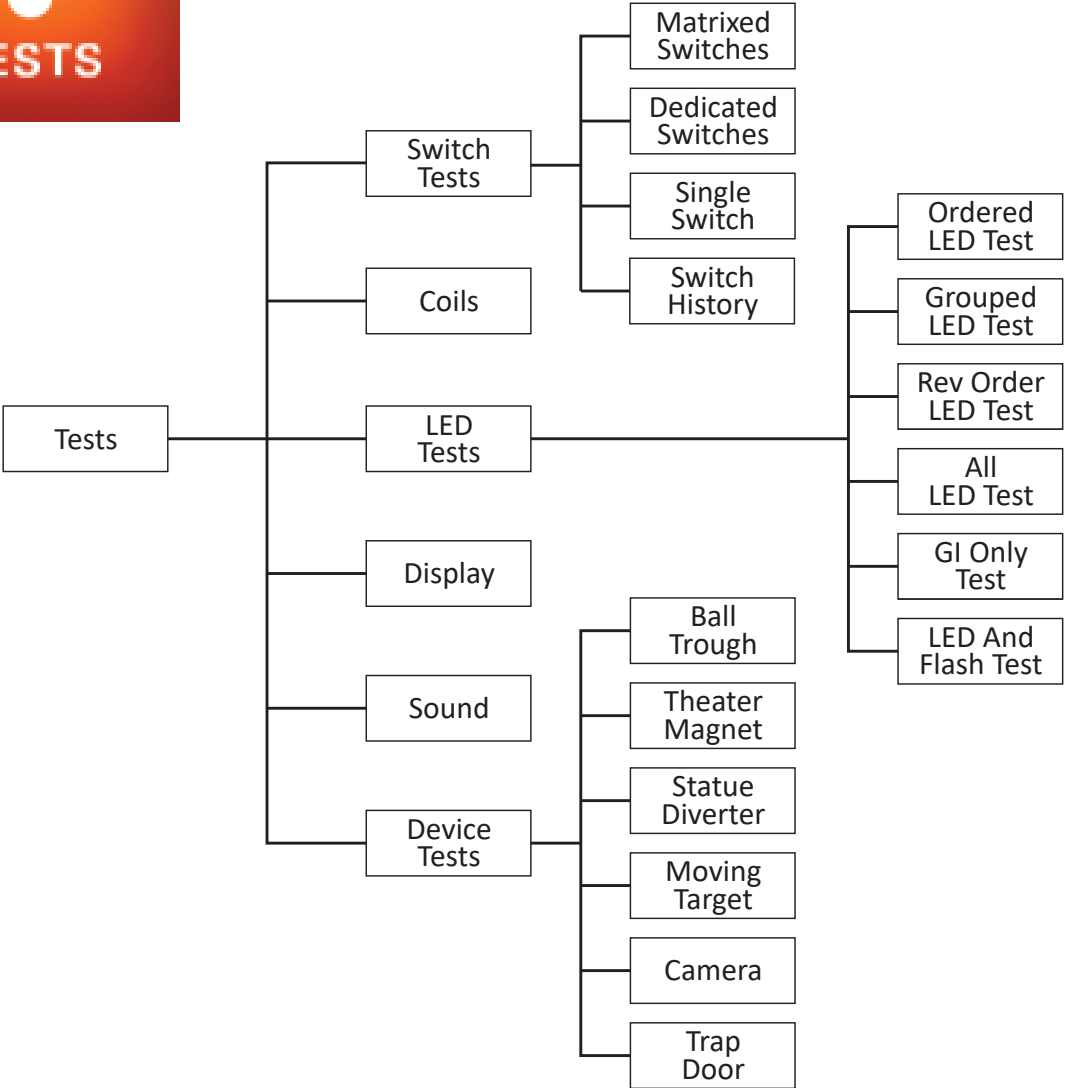


Figure B3. Tests menu tree.



## Matrixed Switch Test

When you enter the **Matrixed Switch Test**, the LCD monitor will display the screen shown in figure B4. A window highlighting locations/states of switches on the game’s playfield (at right in figure B4) can be toggled on and off by pressing the **Start** button on the front of the cabinet. The playfield window can be moved to the center or right side of the screen by using the **Up/+** or **Down/-** buttons. Each square in the playfield window corresponds to a matrixed switch. The color of the square (in both the playfield window and the matrix itself) represents the current state of that switch.

Active switches, regardless of their type, are displayed in bright green squares. Inactive opto switches are displayed in light tan (if normally unblocked) or dark tan (if normally blocked) squares; all other inactive switches are displayed in bright blue (if normally open) or navy blue (if normally closed) squares. Bad switches (switches that have been inactive for approximately 60 balls played) are displayed in red squares. Unused positions in the matrix are represented by gray squares; any unused position that is registering active (an error) is represented by a brown square.

The driver (column) and return (row) numbers for each switch, along with corresponding wire colors and I/O Board connector/pin numbers, are shown at the top and left side of the screen, respectively.

You can simultaneously test as many switches as you like, or repeatedly test a single switch, observing the results in the matrix and/or the playfield window. The game also provides an audible response each time the state of a switch changes. Note: When adjusting a switch, the best method for testing it is to roll a pinball over it, through it or into it.

To exit the **Matrixed Switch Test** at any time, press the **Back/Escape** button.

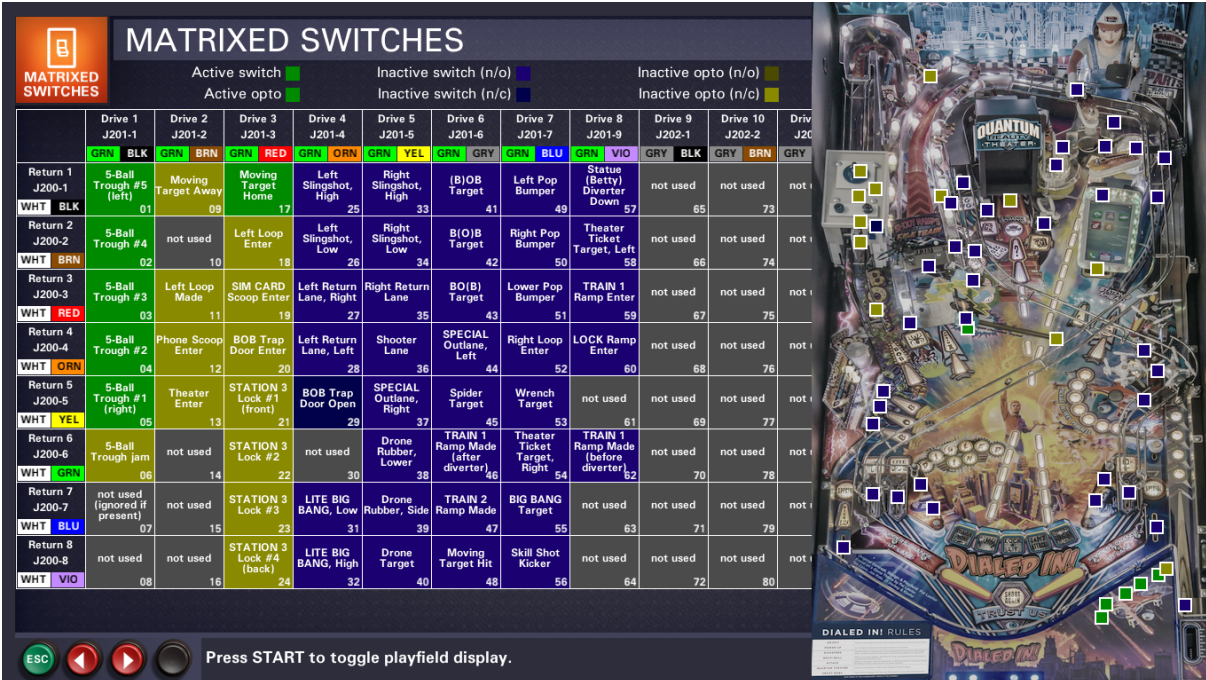


Figure B4. Matrixed Switch Test screen.





# Dedicated Switch Test

When you enter the **Dedicated Switch Test**, the LCD monitor will display the screen shown in figure B5. The four dedicated switch strings are shown, grouped by their common ground wire. Each square in each string corresponds to a specific switch; the color of the square represents the current state of that switch.

Active switches, regardless of their type, are displayed in bright green squares. Inactive opto switches are displayed in light tan (if normally unblocked) or dark tan (if normally blocked) squares; all other inactive switches are displayed in bright blue (if normally open) or navy blue (if normally closed) squares. Bad switches (switches that have been inactive for approximately 60 balls played) are displayed in red squares. Unused positions in the matrix are represented by gray squares; any unused position that is registering active (an error) is represented by a brown square.

Wire colors and I/O Board connector/pin numbers are shown for each string of switches.

You can simultaneously test as many switches as you like, or repeatedly test a single switch, observing the results on the screen. The game also provides an audible response each time the state of a switch changes.

To exit the **Dedicated Switch Test** at any time, press the **Back/Escape** button.

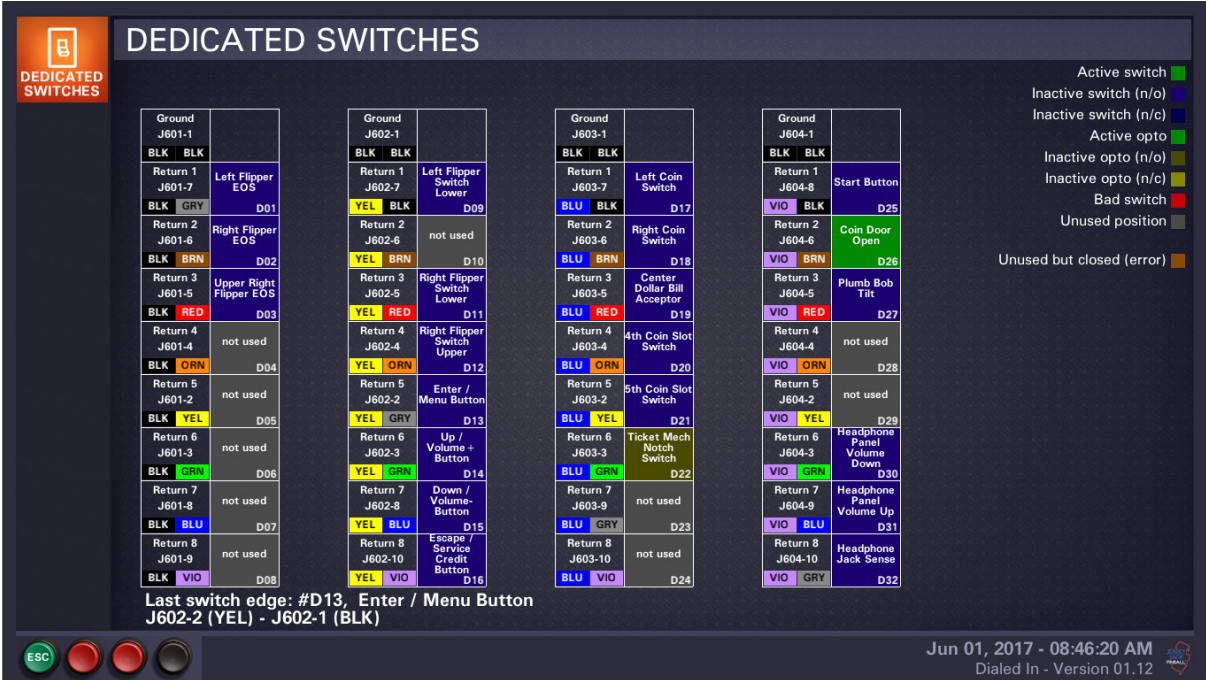


Figure B5. Dedicated Switch Test screen.



## Single Switch Test

When you enter the **Single Switch Test**, the LCD monitor will display the screen shown in figure B6. The entire list of dedicated and matrixed switches is shown alongside a window highlighting the location/state of the currently selected switch on the game’s playfield (at right in figure B6). The switch is displayed as a small, blinking square; the color of the square represents its current state.

An active switch, regardless of its type, is displayed as a bright green square. An inactive opto switch is displayed as a light tan (if normally unblocked) or dark tan (if normally blocked) square; any other inactive switch is displayed as a bright blue (if normally open) or navy blue (if normally closed) square. A bad switch (a switch that has been inactive for approximately 60 balls played) is displayed as a red square. Unused positions in the matrix are not displayed in the playfield window.

All switch driver (column) and return (row) numbers are shown, along with corresponding wire colors and I/O Board connector/pin numbers.

You can scroll through the list of matrixed switches, using the **Up/+** and **Down/-** buttons, and select any switch to test. You can then repeatedly open or close the selected switch, observing the results in the playfield window. The game also provides an audible response each time the state of the switch changes. Note: When adjusting a switch, the best method for testing it is to roll a pinball over it, through it or into it.

To exit the **Single Switch Test** at any time, press the **Back/Escape** button.



Figure B6. Single Switch Test screen.





## Switch History Test

When you enter the **Switch History Test**, the LCD monitor will display the screen shown in figure B7. A list of the 24 most recent dedicated and/or matrixed switch inactive-to-active transitions is shown alongside a window depicting the game’s playfield (at right in figure B7).

All switch driver (column) and return (row) numbers are shown, along with corresponding wire colors and I/O Board connector/pin numbers.

You can clear the **Switch History Test** listing by pressing the *Enter* button.

To exit the **Switch History Test** screen at any time, press the *Back/Escape* button.

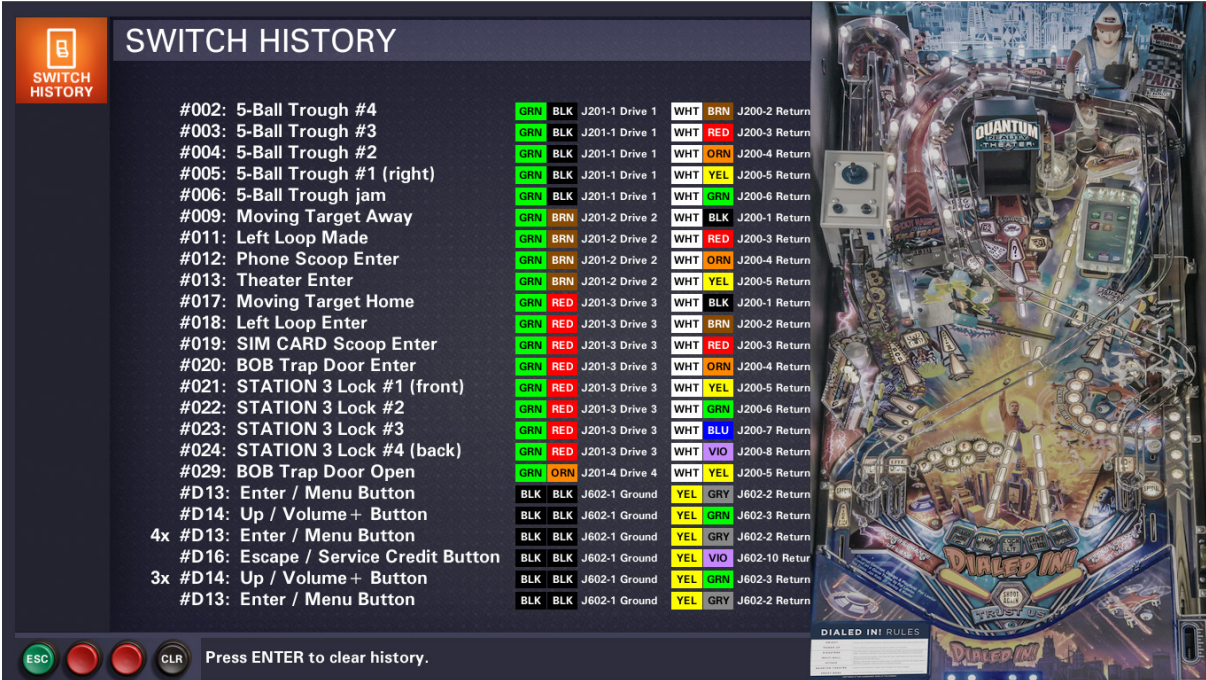


Figure B7. Switch History Test screen.





## Coils Test

When you enter the **Coils Test**, the LCD monitor will display the screen shown in figure B8. The entire list of coils, magnets, motors and lights is shown alongside a window highlighting the location of the currently selected device on the game’s playfield (at right in figure B8). The device is displayed as a small, white, blinking square. Note: Devices in the list that cannot be activated in the **Coils Test** are highlighted in blue text (these devices have their own specific tests).

Coil number, power/trigger wire colors, I/O Board connectors/pins, drive transistor, in-line fuses and supply voltage level are provided for each device in the list.

There are three different modes for triggering a device: **RUNNING**, **REPEAT** and **MANUAL**. The current mode is highlighted in green text at the top of the screen; you change the current mode by pressing the **Enter** button. In **RUNNING** mode, the game automatically cycles through the list, triggering each device once. In **REPEAT** mode, you scroll through the list (using the **Up/+** and **Down/-** buttons) and select a specific device; the game then repeatedly triggers it. In **MANUAL** mode, you select a specific device in the list and trigger it yourself using the **Start** button on the front of the cabinet.

Note: When the coin door is opened, the game’s safety interlock switch (the upper switch on item 4b, pg C-2 of this manual) disables the 70-volt power running to the playfield. In order to activate 70-volt devices in the **Coils Test**, you must either close the coin door or pull the safety interlock switch’s actuator out (it will “click” and lock in place). When you close the coin door, the interlock switch actuator will be pushed back into its normal (unlocked) position.

To exit the **Coils Test** at any time, press the **Back/Escape** button.



Figure B8. Coils Test screen.



# Ordered LED Test

When you enter the **Ordered LED Test**, the LCD monitor will display the screen shown in figure B9. The entire list of RGB LEDs is shown alongside a window highlighting the location of the currently selected LED on the game’s playfield (at right in figure B9). The LED is represented in the window by a small, white, blinking circle, while the actual LED flashes on the playfield.

Initially, the selected LED flashes the color white. You can change the color to red, green, blue and back to white by repeatedly pressing the **Enter** button. The current color will be displayed at the top of the screen. You can scroll through the list of LEDs using the **Up/+** and **Down/-** buttons.

For this test, the RGB LEDs are listed in hardware order (the order that the RGB LED boards are physically connected to controller boards, under the playfield). In this regard, the Dialed In RGB LED string can be considered one long chain. The **Ordered LED Test** allows you to step through and test this entire chain, one LED at a time.

To exit the **Ordered LED Test** at any time, press the **Back/Escape** button.

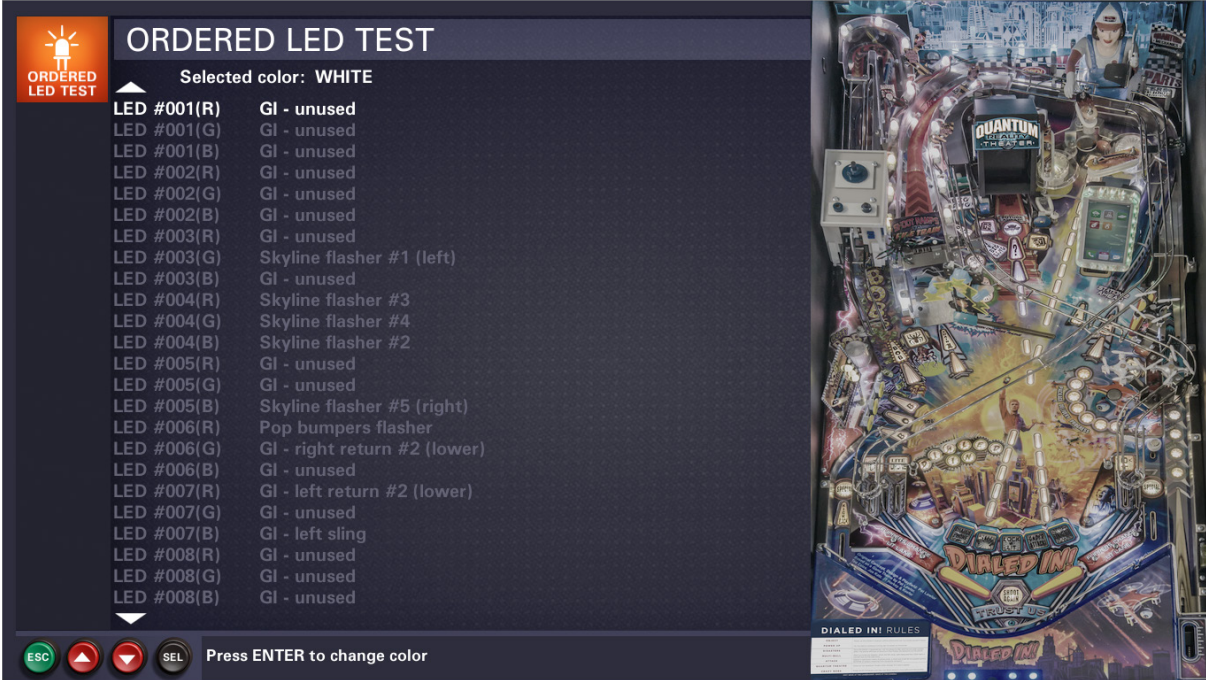


Figure B9. Ordered LED Test screen.





## Grouped LED Test

When you enter the **Grouped LED Test**, the LCD monitor will display the screen shown in figure B10. The entire list of RGB LEDs is shown alongside a window highlighting the location of the currently selected light on the game’s playfield (at right in figure B10). The light is displayed in the window as a small, white, blinking circle while the actual LED flashes on the playfield.

Initially, the selected LED flashes the color white. You can change the color to red, green, blue and back to white by repeatedly pressing the **Enter** button. The current color will be displayed at the top of the screen. You can scroll through the list of LEDs using the **Up/+** and **Down/-** buttons.

For this test, the RGB LEDs are listed in logical/grouped order. The Dialed In RGB LED string is one long chain. The **Grouped LED Test** allows you to step through and test the entire string of RGB LEDs, in groups (such as all **Package Delivery Progress** inserts), in logical order (words spelled in order), as they are associated on the playfield. The test begins with the LEDs in the lowest portion of the main playfield and progresses upward.

To exit the **Grouped LED Test** at any time, press the **Back/Escape** button.

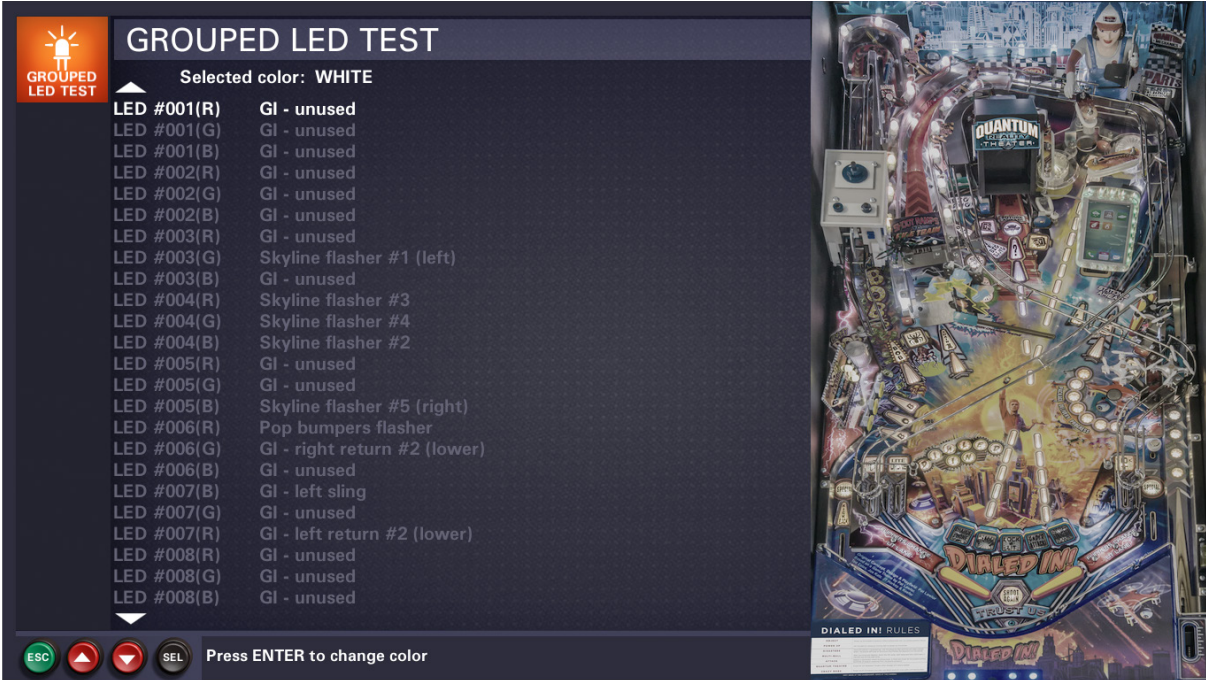
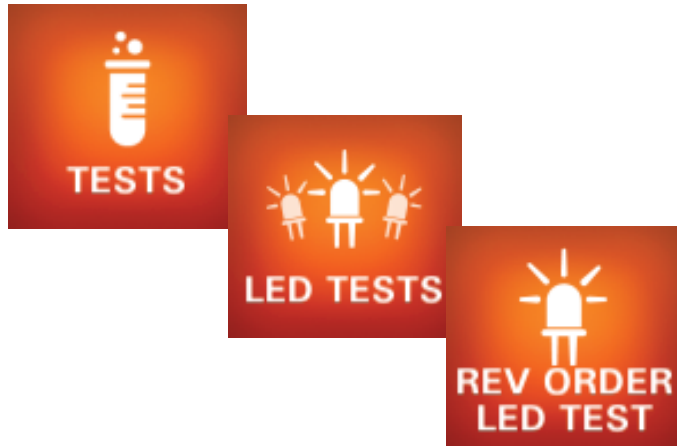


Figure B10. Grouped LED Test screen.



## Reverse Order LED Test

When you enter the **Reverse Order LED Test**, the LCD monitor will display the screen shown in figure B11. The entire list of RGB LEDs is shown alongside a window highlighting the location of the currently selected LED on the game's playfield (at right in figure B11). The LED is represented in the window by a small, white, blinking circle, while the actual LED flashes on the playfield.

Initially, the selected LED flashes the color white. You can change the color to red, green, blue and back to white by repeatedly pressing the **Enter** button. The current color will be displayed at the top of the screen. You can scroll through the list of LEDs using the **Up/+** and **Down/-** buttons.

For this test, the RGB LEDs are listed in reverse hardware order (the reverse order that the RGB LED boards are physically connected to controller boards, under the playfield). The **Reverse Order LED Test** allows you to step through and test this entire chain, in reverse order, one LED at a time.

To exit the **Reverse Order LED Test** at any time, press the **Back/Escape** button.

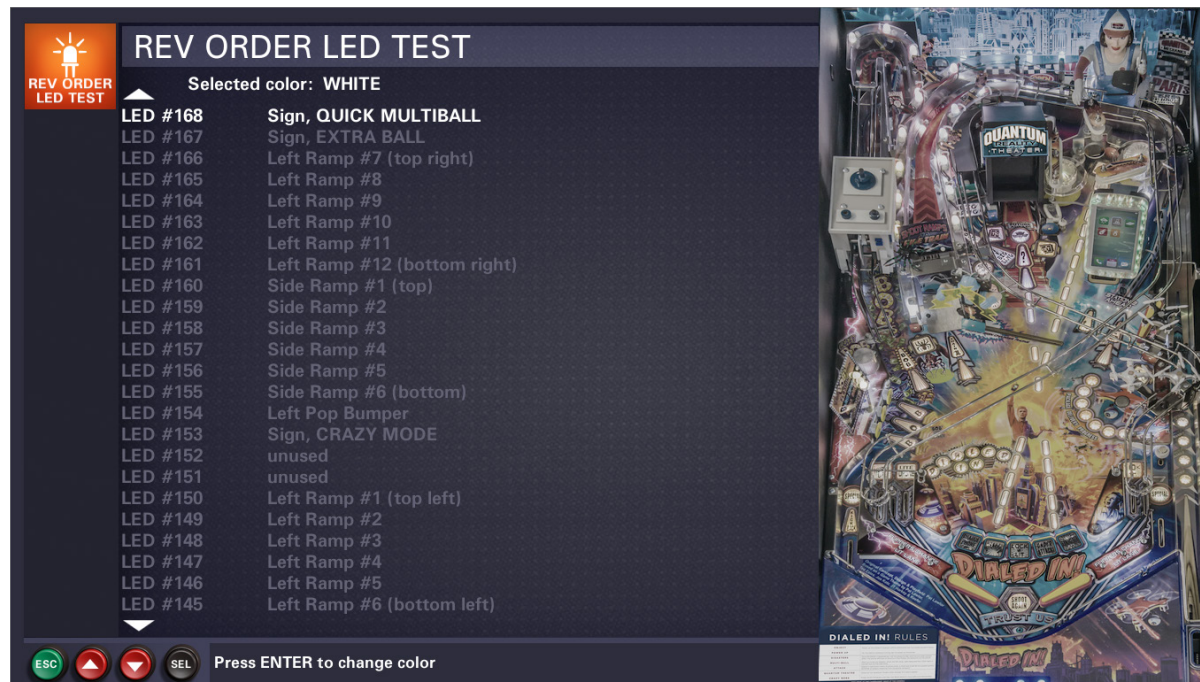


Figure B11. Reverse Order LED Test screen.



## All LED Test

When you enter the **All LED Test**, the LCD monitor will display the screen shown in figure B12. The entire chain of RGB LEDs is lit at once. Initially, the LEDs are white and not flashing. You can change the color to red, green, blue and back to white by repeatedly pressing the **Enter** button. The current color will be displayed at the top of the screen. Press either the **Up/+** or **Down/-** button to toggle the LED string between flashing and constant-on.

To exit the **All LED Test** at any time, press the **Back/Escape** button.



Figure B12. All LED Test screen.





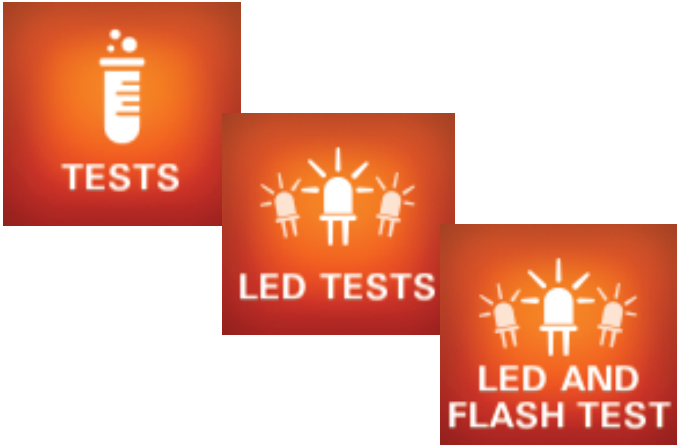
## GI Only Test

When you enter the **GI Only Test**, the LCD monitor will display the screen shown in figure B13. All LEDs used for general illumination are lit at once. Initially, the LEDs are white and not flashing. If the GI LEDs were RGB, you could change the color to red, green, blue and back to white by repeatedly pressing the **Enter** button. The current color will be displayed at the top of the screen. However, all versions of Dialed In games use cool white GI LEDs (no RGB), so they remain white, regardless of what color is selected on the LCD screen. Press either the **Up/+** or **Down/-** button to toggle the GI LEDs between flashing and constant-on.

To exit the **GI Only Test** at any time, press the **Back/Escape** button.



Figure B13. GI Only Test screen.



## LED And Flash Test

When you enter the **LED And Flash Test**, the LCD monitor will display the screen shown in figure B14. All RGB LEDs and GI LEDs are lit at once. All CPU-controlled lights (spotlights, Start button light, etc.) are flashing. Initially, the RGB and GI LEDs are white and not flashing. You can change the color of the RGB LEDs to red, green, blue and back to white by repeatedly pressing the **Enter** button. The current color will be displayed at the top of the screen. Press either the **Up/+** or **Down/-** button to toggle the RGB and GI LEDs between flashing and constant-on.

To exit the **LED And Flash Test** at any time, press the **Back/Escape** button.



Figure B14. LED And Flash Test screen.



## Display Test

When you enter the **Display Test**, the LCD monitor will display an edge-to-edge red screen, as shown at left in figure B15. You can change the full-screen color to green, blue then white by pressing the **Up/+**, **Down/-** or **Enter** button three times. Pressing one of these buttons again will fill the screen with a white grid against a black background; once more will change the grid to black against a white background.

The color screens allow you to test the LCD monitor's color saturation performance, from edge to edge. The grids allow you to test image alignment on the monitor.

To exit the **Display Test** at any time, press the **Back/Escape** button.

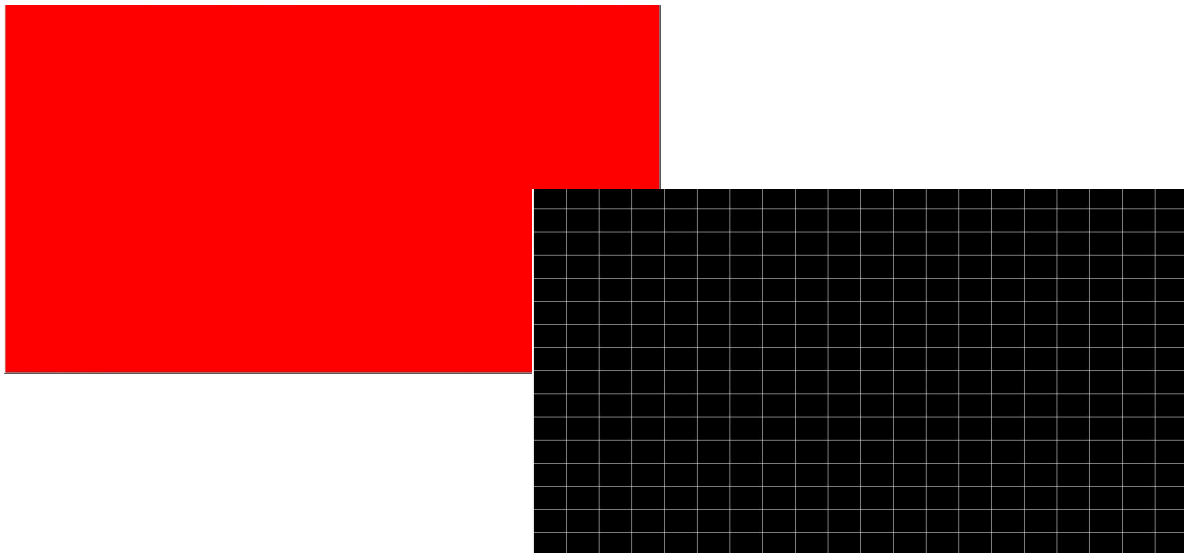


Figure B15. Display Test screens.





## Sound Test

When you enter the **Sound Test**, the LCD monitor will display the screen shown in figure B16. The list of programmed test sounds is displayed.

There are three different modes for testing sounds: **RUNNING**, **REPEAT** and **MANUAL**. The current mode is highlighted in green text at the top of the screen; you change the current mode by pressing the **Enter** button. In **RUNNING** mode, the game automatically cycles through the list, playing each sound once. In **REPEAT** mode, you scroll through the list (using the **Up/+** and **Down/-** buttons) and select a specific sound; the game then repeatedly plays it. In **MANUAL** mode, you select a specific sound in the list and trigger it yourself using the **Start** button on the front of the cabinet.

To exit the **Sound Test** at any time, press the **Back/Escape** button.

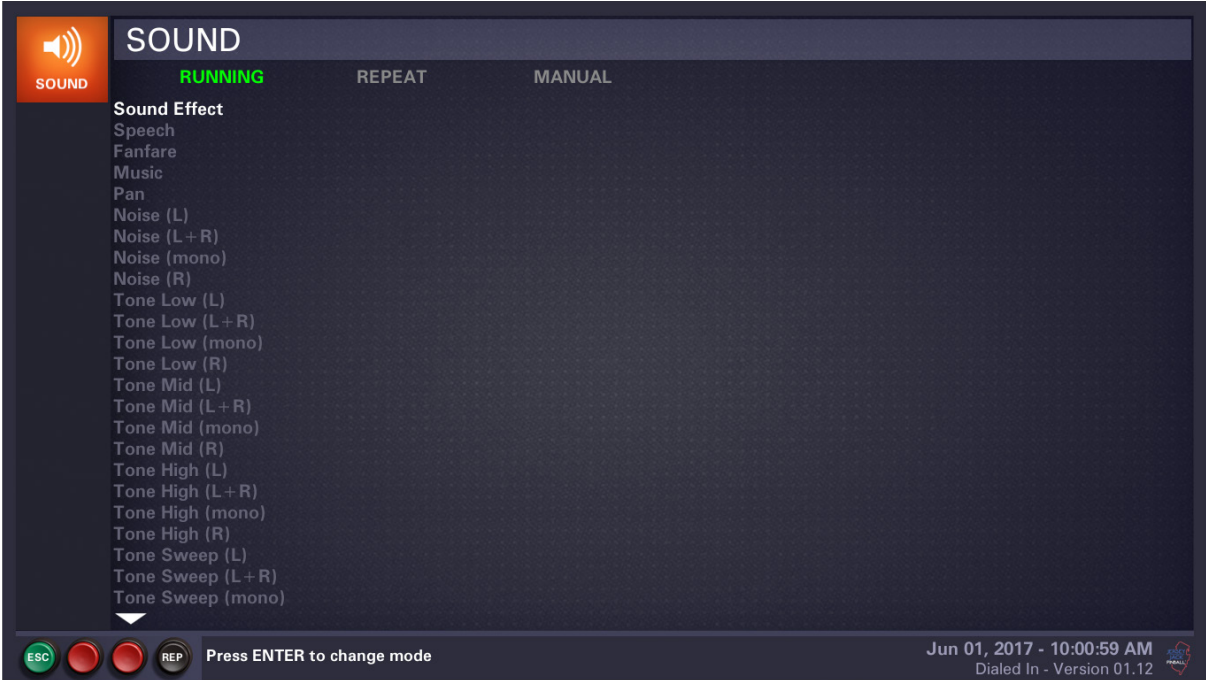


Figure B16. Sound Test screen.



## Ball Trough Test

When you enter the **Ball Trough Test**, the LCD monitor will display the screen shown in figure B17. The squares on the screen represent the current states of the six opto switch transmitter/receiver pairs in the ball trough mechanism, under the lower part of the playfield. There are five opto switches in the bottom of the trough (labeled “#1” to “#5”) and one higher, in the neck of the trough VUK (labeled “jam”). A green square represents a blocked opto switch, typically caused by a ball in that position in the trough. A tan square represents an unblocked opto switch (no ball in that position). For reference, corresponding matrixed switch numbers are shown under each square.

You can use the **Enter** button to fire the trough VUK. The rightmost ball in the trough will be kicked into the shooter lane, then auto-launched up the playfield. Most of the high power coils will be enabled, so slingshots, pop bumpers, VUKs and flippers (if activated by the flipper buttons) will kick a ball around as it rolls down the playfield - so **be careful with your fingers!** You can empty the trough, one ball at a time (catching each one before it returns to the trough), and test all of the opto switches in the process.

Note: When the coin door is opened, the game’s safety interlock switch (the upper switch on item 4b, pg C-2 of this manual) disables the 70-volt power running to the playfield. To allow coils to function in the **Ball Trough Test**, you must either close the coin door or pull the safety interlock switch’s actuator out (it will “click” and lock in place). When you close the coin door, the interlock switch actuator will be pushed back into its normal (unlocked) position.

To exit the **Ball Trough Test** at any time, press the **Back/Escape** button.

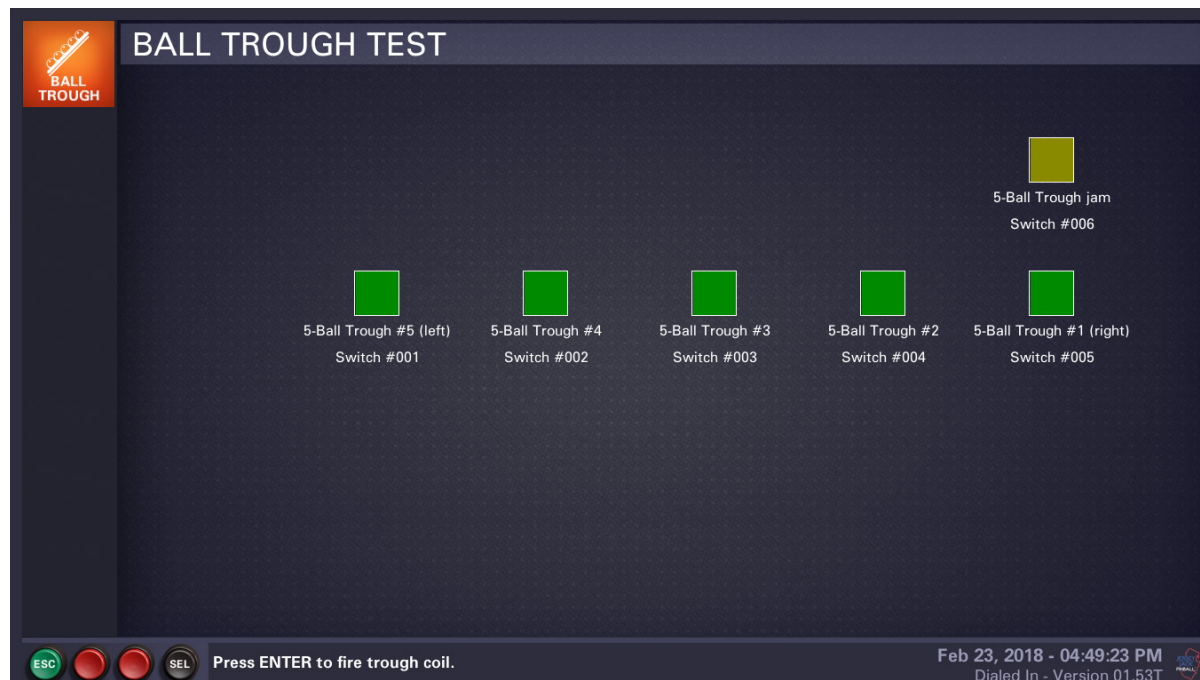


Figure B17. Ball Trough Test screen.



## Theater Magnet Test

When you enter the Theater Magnet **Test**, the LCD monitor will display the screen shown in figure B18. The left square on the screen represents the state of the entrance opto for the Theater (in the upper center of the playfield). This square turns green when a ball is shot into the Theater (breaking the opto pair's infrared light beam). The middle square represents the state of Theater Magnet. This square turns red when the Theater Magnet is activated. The square on the right turns light tan when the Theater Magnet is cooling down (this typically occurs immediately after a magnet activation). A transparent square indicates an inactive opto, no magnet activation, or no cooling taking place.

To test the Theater Magnet, roll a ball up into the Theater. The switch should register the ball entering the Theater and the magnet should catch the ball. The magnet should then release the ball, pause, then activate again, "tossing" the ball through the tunnel behind the Theater, up into the pop bumpers or around the top of the right orbit, to the upper right flipper.

You can adjust the length of the pause/delay at the top of the screen. To make a change, press the **Enter** button, then use the **Up/+** and **Down/-** buttons to specify a new numeric value (positive or negative). Once you're finished adjusting the delay, press the **Enter** button once again to apply the change. To cancel the change, press the **Back/Escape** button. Try several delay values to find the one that works best for your game setup.

Note: When the coin door is opened, the game's safety interlock switch (the upper switch on item 4b, pg C-2 of this manual) disables the 70-volt power running to the playfield. To allow coils to function in the **Theater Magnet Test**, you must either close the coin door or pull the safety interlock switch's actuator out (it will "click" and lock in place). When you close the coin door, the interlock switch actuator will be pushed back into its normal (unlocked) position.

To exit the **Theater Magnet Test** at any time, press the **Back/Escape** button.

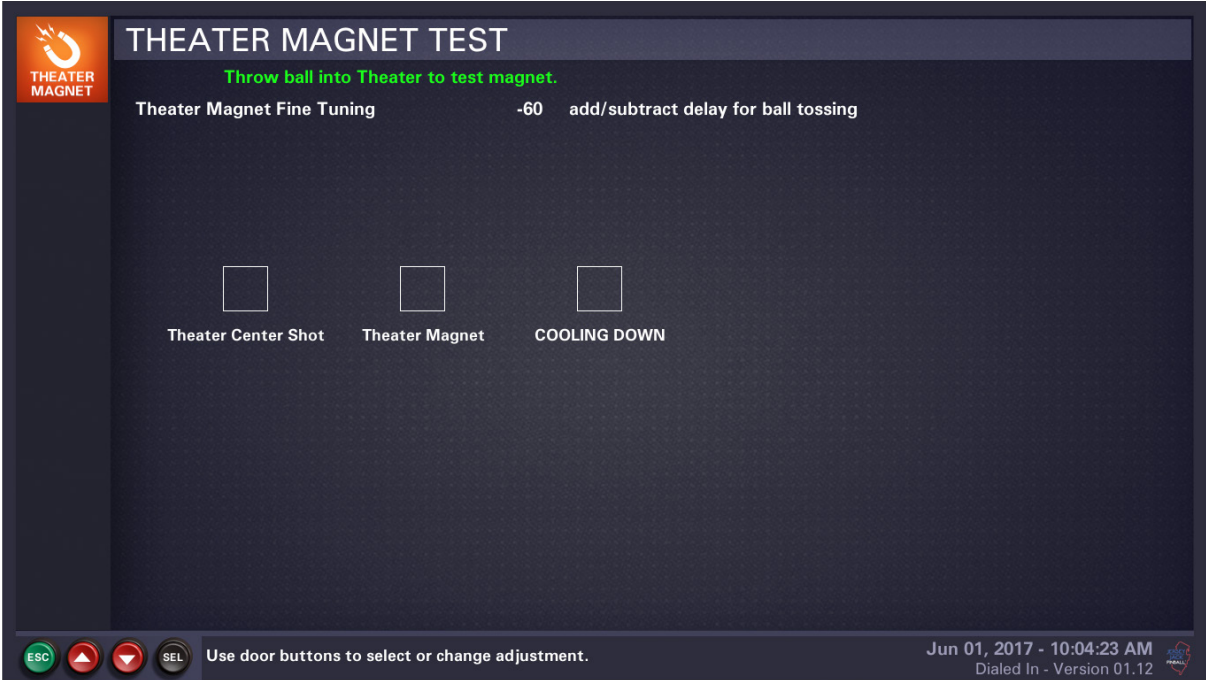


Figure B18. Theater Magnet Test screen.





## Statue (Betty) Diverter Test

When you enter the Statue (**Betty**) Diverter Test, the LCD monitor will display the screen shown in figure B19. The upper square on the screen represents the state of the microswitch on the Robot Betty Assembly (in the upper right corner of the playfield). This switch is activated when Betty's diverter arm is in the down position. The lower square represents the state of the **Enter** button. A green square indicates an activated microswitch (or a button being pressed); a transparent square indicates an inactive microswitch (or no button being pressed).

You can use the **Enter** button to activate Betty's motor. Running the motor will change the position of Betty's diverter arm and allow you to test the functionality of the microswitch.

To exit the **Statue Diverter Test** at any time, press the **Back/Escape** button.

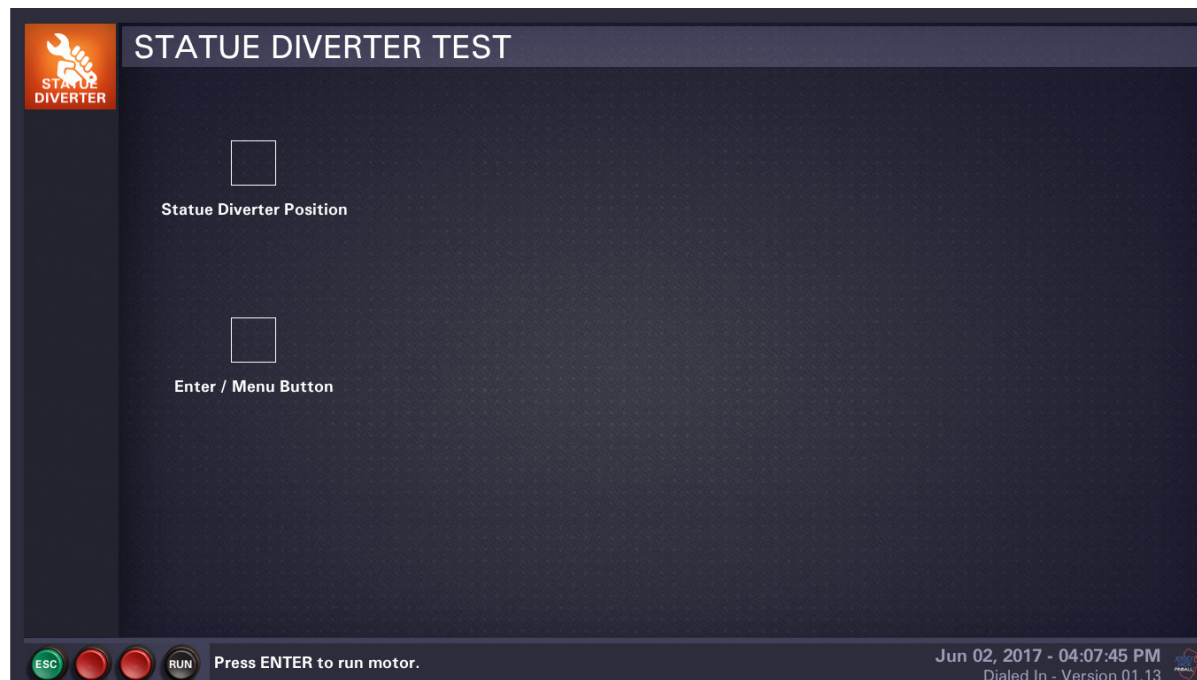


Figure B19. Statue (Betty) Diverter Test screen.



## Moving Target Test

When you enter the **Moving Target Test**, the LCD monitor will display the screen shown in figure B20. The upper squares on the screen represent the states of the two U-shaped opto switches on the Moving Target Assembly (in the center of the playfield). One opto switch indicates that the target is all the way to the player's left (home); the other indicates the target is all the way to the player's right (away). The lower square represents the state of the **Enter** button. A green square indicates an activated opto switch (or a button being pressed); a transparent square indicates an inactive opto switch (or no button being pressed).

You can use the **Enter** button to activate the moving target motor. Running the motor will change the position of the moving target and allow you to test the functionality of the opto switches.

To exit the **Moving Target Test** at any time, press the **Back/Escape** button.

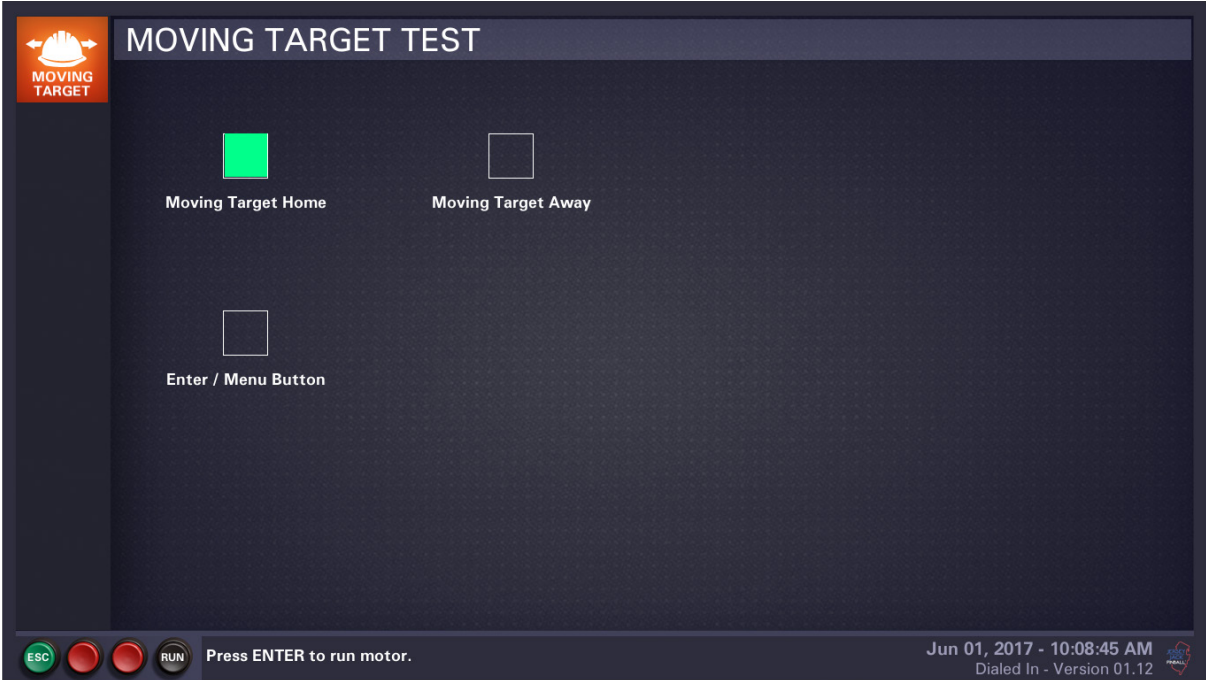
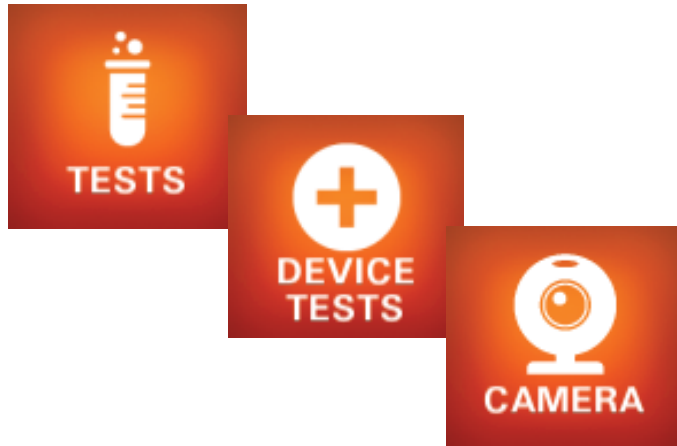


Figure B20. Moving Target Test screen.



## Camera Test

When you enter the **Camera Test**, the LCD monitor will display a screen similar to that shown in figure B21. A large window on the left side of the screen will show what the game's camera (in the lower, center area of the backbox) currently "sees". Within that window, a green box will be placed around (what the software determines to be) the "best match" for a person's face. Red boxes will be placed around (what the software determines to be) "less accurate" face matches. You can wave your hand around to test motion detection. When the software recognizes your hand moving, the words "MOTION DETECTED" will appear, in green, in the center of the screen.

You select a sensitivity control to adjust (motion tracking or face recognition) with the **Up/+** and **Down/-** buttons. The currently selected control will be highlighted in white text. To make a change, press the **Enter** button, then use the **Up/+** and **Down/-** buttons to specify a new numeric value. You are providing relative sensitivity levels for the software to use to recognize faces and detect motion. The game software will apply these levels to the camera image data during game play in order to implement special features. Once you're finished adjusting a numerical value, press the **Enter** button once again to apply the change. To cancel the change, press the **Back/Escape** button.

To exit the **Camera Test** at any time, press the **Back/Escape** button.

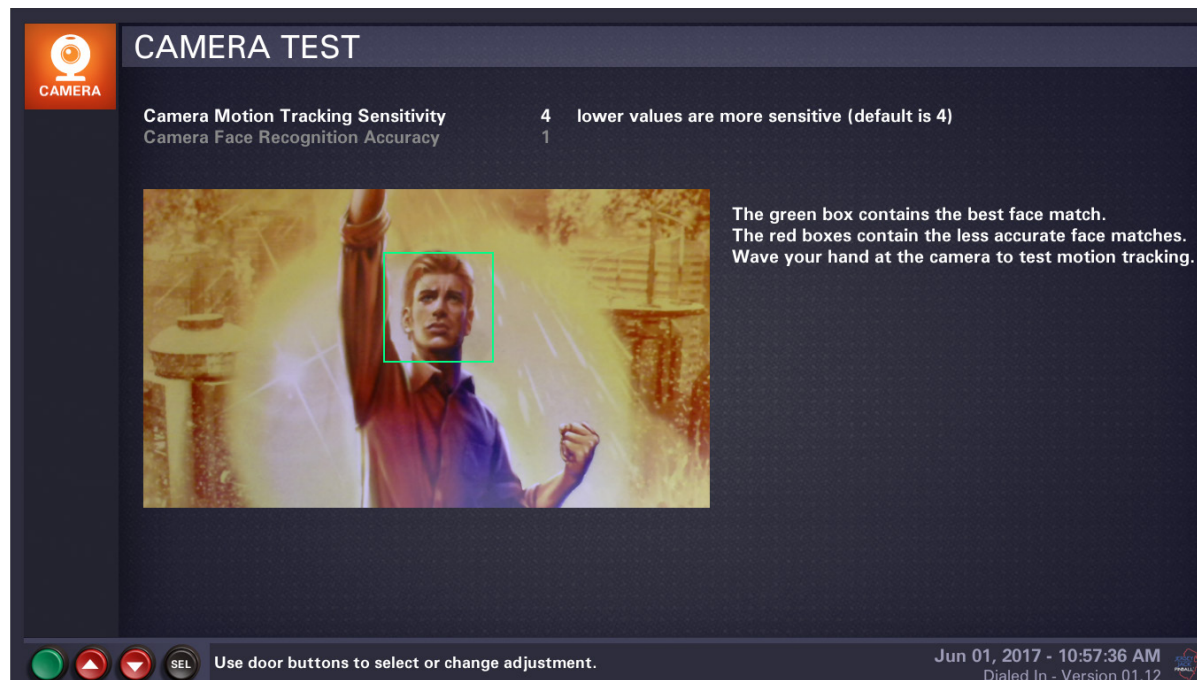


Figure B21. Camera Test screen.





## Trap Door Test

When you enter the **Trap Door Test**, the LCD monitor will display the screen shown in figure B22. The rectangle on the screen represents the current state of the trap door mechanism (on the far left side of the playfield). When the trap door mechanism is in the open position, the rectangle is light tan; when the trap door is in the closed position, the rectangle is dark tan; a red rectangle represents a "broken" trap door mechanism (it failed to respond to several attempts to open it). For reference, corresponding coil numbers and matrixed switch numbers are shown under each square. Green text indicates the coil or switch is active; white text indicates that the coil or switch is inactive.

You can use the **Enter** button to toggle the status (open or closed) of the trap door mechanism. When you open the trap door, a new rectangle appears on top of the first one. This rectangle turns blue when the switch underneath/inside the trap door mechanism is closed; when the switch is open, the rectangle remains transparent.

Note: When the coin door is opened, the game’s safety interlock switch (the upper switch on item 4b, pg C-2 of this manual) disables the 70-volt power running to the playfield. To allow coils to function in the **Trap Door Test**, you must either close the coin door or pull the safety interlock switch’s actuator out (it will “click” and lock in place). When you close the coin door, the interlock switch actuator will be pushed back into its normal (unlocked) position.

To exit the **Trap Door Test** at any time, press the **Back/Escape** button.

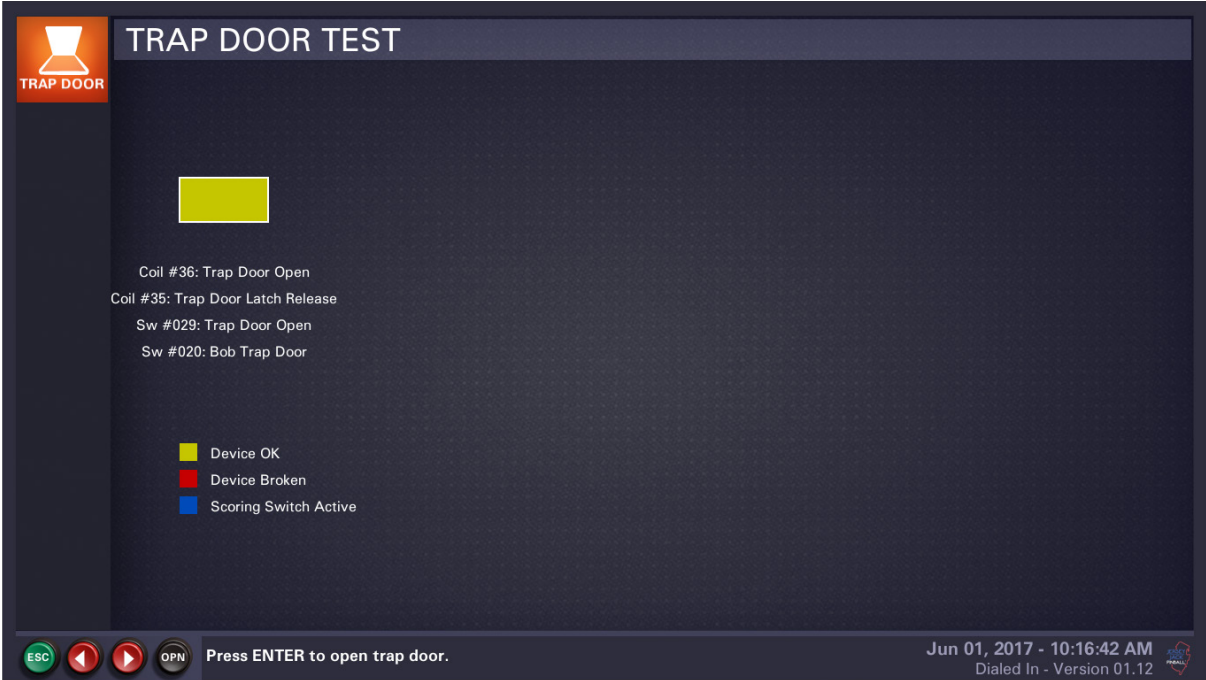


Figure B22. Trap Door Test screen.

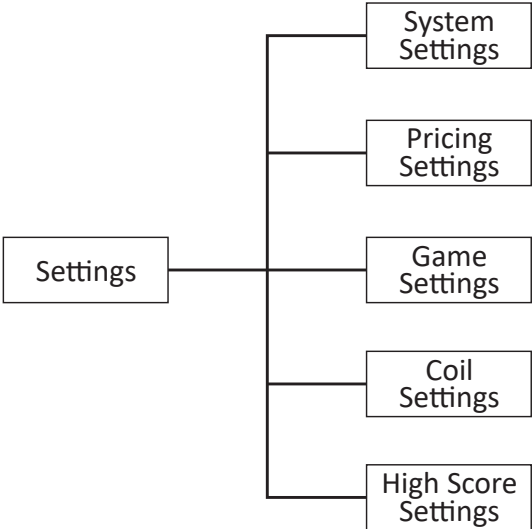


Figure B23. Settings menu tree.

## B.3 Settings

The **Settings** menu (see figure B23 for an outline) allows the user to adjust system, pricing, game, coil and high score settings, to personalize the game (home use) or optimally configure it for a location or route (commercial use).

**System Settings** - adjust settings for high-level game controls such as balls per game, ball save time, tilt warnings, audio levels, match percentage and replay/scoring awards.

**Pricing Settings** - adjust settings for pricing controls such as free play, accepted currency, coin door specifics and pricing tiers/levels.

**Game Settings** - adjust game-specific settings such as BOB difficulty, Kickback & Big Bang relight frequency, and Mode, Bonus & Multiball difficulties.

**Coil Settings** - adjust kicking strength for virtually every coil in the game.

**High Score Settings** - adjust settings related to high scores such as whether the game will record them, what the award for high score will be, multiple player initials and default high scores.

# System Settings



When you enter the **System Settings** menu, the LCD monitor will display the screen shown in figure B24. Settings that have been changed from factory defaults are displayed in red. Default settings are displayed in green, but only when a menu item is highlighted. Menu items that cannot be altered are displayed in gray. You can scroll through menu items with the **Up/+** and **Down/-** buttons; press **Enter** to select an item you would like to change. Use the **Up/+** and **Down/-** buttons to alter the highlighted data value, then press **Enter** to accept the new value. Press **Back/Escape** to escape from a selected menu item without saving changes. Note: Pindemption® settings are only available in a Dialed In game with a Pindemption®-enabled security dongle.

To exit the **System Settings** menu at any time, press the **Back/Escape** button.

## GENERAL

**Game Play Type:** specify how the game will end: after a designated number of balls played or a designated amount of time. **<Pindemption® setting>**

- BALLS: traditional style of pinball play

Default: BALLS
- TIME: timed pinball play

**Ball Play Type:** specify how extra balls will be played during a game. With the BALLS IN PLAY option, extra balls will be played immediately after the ball on which they are earned. With the BALLS IN RESERVE option, earned extra balls will be held until the end of the game, with players continuing to take turns playing one ball at a time until all balls in reserve have been played.

- BALLS IN PLAY: extra ball played immediately

Default: BALLS IN RESERVE
- BALLS IN RESERVE: extra ball held in reserve, to play later

**Balls Per Game:** specify the number of balls each player gets to play within a single game.

- 1-5: 1-5 balls

Default: 3 balls

**Time Per Game:** specify how long a game will last. **<Pindemption® setting>**

- 30-300: 30-300 seconds

Default: 45 seconds

**Timed Game Over Type:** specify how a timed game will end. **<Pindemption® setting>**

- INSTANT DEATH: game ends when timer reaches zero.

Default: INSTANT DEATH

SUDDEN DEATH: game ends when timer reaches zero and the ball in play drains.

SUDDEN TIMER: game ends when timer reaches zero and the Sudden Death Timer reaches zero.



Figure B24. System Settings screen.





**Knocker Control:** specify whether to allow the knocker to kick or not.

*ON:* always use the knocker Default: ON

*OFF:* disable the knocker

*SOMETIMES:* occasionally use the knocker

### EXTRA BALLS

**Game Extra Ball Limit:** specify the maximum number of extra balls that can be won in any game.

*1-9:* 1-9 extra balls Default: Unlimited

Unlimited: unlimited extra balls

No Extra Balls: no extra balls

**Stacked Extra Ball Limit:** specify the maximum number of extra balls that can be stacked by a player at any time during a game.

*1-9:* 1-9 extra balls Default: Unlimited

Unlimited: unlimited extra balls

No Extra Balls: no extra balls

### TILT

**Tilt Warning Type:** specify whether tilt warnings accumulate per ball or per game.

*PER BALL:* accumulate per ball Default: PER GAME

*PER GAME:* accumulate per game

**Tilt Warnings:** specify the number of warnings issued before the game tilts.

*0-10:* 0-10 warnings Default: 2 warnings

### SOUND

**Master Volume:** specify the overall volume level for the game.

*0-50:* 0-50 level Default: 26 level

**Front Panel Headphone Volume:** specify the headphone volume level for the game.

*0-50:* 0-50 level Default: 26 level

**Front Panel Master Volume:** specify whether the cabinet front controls will change the master volume level or not.

*ON:* controls change master volume Default: W/FREE PLAY

*OFF:* controls do not change master volume

W/FREE PLAY: controls only change master volume in free play

**Volume Effect Intensity:** specify the intensity of volume effects (multiplies volume units).

*1-5:* 1-5 Default: 1

**Maximum Volume Effect:** specify how extra-loud the game can get, in volume units.

*1-20:* 0-50 level Default: 5 units

OFF: not used

**Music Mix:** specify the gain for the music in the game.

*0-125:* 0-125 Default: 75

**Speech Mix:** specify the gain for the speech sounds in the game.

*0-125:* 0-125 Default: 75

**Fanfare Mix:** specify the gain for the fanfares in the game.

*0-125:* 0-125 Default: 75

**FX Mix:** specify the gain for the sound effects (FX) in the game.

*0-125:* 0-125 Default: 75

**Attract Mode Sounds:** specify whether the game will play sounds during attract mode or not.

*ON:* play sounds Default: ON

*OFF:* do not play sounds

**Attract Mode Music:** specify whether the game will play music during attract mode or not.

*ON:* play music Default: OFF

*OFF:* do not play music

### REPLAY AWARDS

**Replay:** specify whether the game will use the automatic replay award system or not. With the automatic replay award system, up to four Replay Score(s) are set by the game and periodically adjusted to maintain the specified Replay Percent below. The number of Replay Levels and the award for reaching any level are selectable below. You can also employ Replay Boosts, if desired.

*AUTO:* use automatic replay award system Default: OFF

*OFF:* no replay awards

**Replay Percent:** specify the desired replay percentage (Replay: AUTO only).

*1-30:* 1-30% Default: 10%





## Pricing Settings



**Figure B25. Pricing Settings screen.**

When you enter the **Pricing Settings** menu, the LCD monitor will display the screen shown in figure B25. Settings that have been changed from factory defaults are displayed in red. Default settings are displayed in green, but only when a menu item is highlighted. Menu items that cannot be altered are displayed in gray. You can scroll through menu items with the **Up/+** and **Down/-** buttons; press **Enter** to select an item you would like to change. Use the **Up/+** and **Down/-** buttons to alter the highlighted data value, then press **Enter** to accept the new value. Press **Back/Escape** to escape from a selected menu item without saving changes.

To exit the **Pricing Settings** menu at any time, press the **Back/Escape** button.

## GENERAL

**Free Play:** specify whether the game will play for free or not.

YES: play for free

Default: YES

*NO: require currency for play*

**Currency:** specify currency for the game to accept. Default values and currency labels under COIN DOOR and PRICING SCHEME headings change with different types of currency. Values and labels shown below are for Dollars currency.

*Dollars (\$):* Dollars

Default: Dollars

Euros (€): Euros

*Pounds (£):* Pounds

*Yen (¥): Yen*

*Krone (kr)*: Krone

*Krona (kr): Krona*

*Coins:* coins

*Tokens:* tokens

*Swipes:* card swipes through a reader

*Bills:* bills through a bill acceptor

**Money Limit:** specify the maximum amount of money the game can accept at any time.

**\$0.00:** Unlimited dollar amount

Default: \$0.00

\$0.01-\$100,000.00: \$0.01-\$100,000.00

**Credit Limit:** specify the maximum number of credits the game can hold at any time.

0: Unlimited credits

Default: 0

*1-100: 1-100 credits*

**COIN DOOR**

**Coin Switch 1 Pulse Amount:** specify the amount of currency represented by one pulse from coin switch 1.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$0.25

**Coin Switch 2 Pulse Amount:** specify the amount of currency represented by one pulse from coin switch 2.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$0.25

**Coin Switch 3 Pulse Amount:** specify the amount of currency represented by one pulse from coin switch 3.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$0.25

**Coin Switch 4 Pulse Amount:** specify the amount of currency represented by one pulse from coin switch 4.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$0.25

**Coin Switch 5 Pulse Amount:** specify the amount of currency represented by one pulse from coin switch 5.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$0.25

**Card Reader Installed:** specify whether a card reader is installed in the game or not.

*YES:* card reader installed    Default: NO

*NO:* no card reader installed

**PRICING SCHEME**

**Pricing Levels:** specify the number of desired pricing levels (or tiers).

*1-10:* 1-10 levels    Default: 1 level

**Tier 1 Cost:** specify cost for pricing tier 1.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$1.00

**Tier 1 Credits:** specify the number of credits for pricing tier 1.

*1-100:* 1-100 credits    Default: 1 credit

**Tier 2 Cost:** specify cost for pricing tier 2.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$2.00

**Tier 2 Credits:** specify the number of credits for pricing tier 2.

*1-100:* 1-100 credits    Default: 2 credits

**Tier 3 Cost:** specify cost for pricing tier 3.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$3.00

**Tier 3 Credits:** specify the number of credits for pricing tier 3.

*1-100:* 1-100 credits    Default: 3 credits

**Tier 4 Cost:** specify cost for pricing tier 4.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$4.00

**Tier 4 Credits:** specify the number of credits for pricing tier 4.

*1-100:* 1-100 credits    Default: 4 credits

**Tier 5 Cost:** specify cost for pricing tier 5.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$5.00

**Tier 5 Credits:** specify the number of credits for pricing tier 5.

*1-100:* 1-100 credits    Default: 5 credits

**Tier 6 Cost:** specify cost for pricing tier 6.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$6.00

**Tier 6 Credits:** specify the number of credits for pricing tier 6.

*1-100:* 1-100 credits    Default: 6 credits

**Tier 7 Cost:** specify cost for pricing tier 7.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$7.00

**Tier 7 Credits:** specify the number of credits for pricing tier 7.

*1-100:* 1-100 credits    Default: 7 credits

**Tier 8 Cost:** specify cost for pricing tier 8.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$8.00

**Tier 8 Credits:** specify the number of credits for pricing tier 8.

*1-100:* 1-100 credits    Default: 8 credits

**Tier 9 Cost:** specify cost for pricing tier 9.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$9.00

**Tier 9 Credits:** specify the number of credits for pricing tier 9.

*1-100:* 1-100 credits    Default: 9 credits

**Tier 10 Cost:** specify cost for pricing tier 10.

*\$0.01-\$100,000.00:* \$0.01-\$100,000.00                      Default: \$10.00

**Tier 10 Credits:** specify the number of credits for pricing tier 10.

*1-100:* 1-100 credits    Default: 10 credits



## Game Settings

When you enter the **Game Settings** menu, the LCD monitor will display the screen shown in figure B26. Settings that have been changed from factory defaults are displayed in red. Default settings are displayed in green, but only when a menu item is highlighted. Menu items that cannot be altered are displayed in gray. You can scroll through menu items with the **Up/+** and **Down/-** buttons; press **Enter** to select an item you would like to change. Use the **Up/+** and **Down/-** buttons to alter the highlighted data value, then press **Enter** to accept the new value. Press **Back/Escape** to escape from a selected menu item without saving changes.

To exit the **Game Settings** menu at any time, press the **Back/Escape** button.

### GENERAL

**Floating Scores:** specify whether to show point values, as they're earned, floating up the display or not.

- WITH SCORES:** show floating scores with scores      Default: WITH SCORES
- ALWAYS:** always show floating scores
- NEVER:** do not show floating scores

**Game Number:** shown for Limited Edition and Collector's Edition games only.

### DEVICES

**Disable Camera Flash Topper:** specify whether to disable the camera flasher topper or not (Std games only).

- YES:** disable the camera      Default: NO
- NO:** enable the camera

**Topper Idle Brightness:** specify the brightness level for the game's lighted topper (CE games only).  
1-32: 1-32 level      Default: 32 level



Figure B26. Game Settings screen.



**Theater Magnet Catch Behavior:** specify how/if the theater magnet should catch and release the ball during game play.

- OFF:* never catch the ball Default: NORMAL
- NORMAL:* catch and release the ball normally
- PARTIAL:* catch the ball for Drone Mystery only
- TEST LAB:* catch the ball and "wiggle" upon release

**Disable Statue Diverter:** specify whether to disable the Betty diverter arm or not.

- YES:* disable the diverter Default: NO
- NO:* enable the diverter

**Disable Trap Door:** specify whether to disable the trap door or not.

- YES:* disable the trap door Default: NO
- NO:* enable the trap door

**Disable Moving Target:** specify whether to disable the moving target or not.

- YES:* disable the moving target Default: NO
- NO:* enable the moving target

**JETS RULE**

**Jets Rule Difficulty:** specify the difficulty level for the pop bumper collect timer.

- 1-2:* 1-2 level Default: 2 level

**HURRY UPS**

**Hurry Up Difficulty:** specify the difficulty level for Hurry Ups.

- 1-3:* 1-3 level Default: 2 level

**KICKBACK**

**Free Kickback Difficulty:** specify the difficulty level for lighting the ball kickback feature (in the left outlane) at the beginning of a ball and/or game.

- 1-4:* 1-4 level Default: 2 level

**B-O-B Completions Needed:** specify the number of times B-O-B must be completed to relight the kickback during game play.

- 1-5:* 1-5 completions Default: 1 completion

**Kickback Stack Limit:** specify how many stacked kickbacks the game will hold at any time.

- 1-10:* 1-10 kickbacks Default: 1 kickback

**Kickback Ball Saver:** specify whether to use Ball Save to correct for a failed kickback attempt or not.

- AGGRESSIVE:* cancel Ball Save if a second Default: AGGRESSIVE
- outlane switch is activated after a kickback attempt
- ALWAYS:* if ball drains 5 seconds after a kickback attempt, activate Ball Save
- NEVER:* do not use Ball Save at all in conjunction with the kickback feature

**CRAZY BOB**

**B-O-B Difficulty:** specify the difficulty level for completing the B-O-B targets.

- 1-6:* 1-6 level Default: 3 level

**B-O-B Letters Spotted:** specify the number of B-O-B letters spotted at start of game.

- 0-2:* 0-2 letters Default: 1 letter

**Crazy Bob Award Stack Limit:** specify how many stacked Crazy Bob awards the game will allow at any time.

- 1-10:* 1-10 awards Default: 3 awards

**Crazy Bob Award Memory:** specify whether Crazy Bob award lights (if unearned) should be "remembered" from ball to ball or not.

- ON:* remember Crazy Bob award Lights Default: ON
- OFF:* reset Crazy Bob award lights

**EXTRA BALL**

**Extra Ball Stack Limit:** specify how many extra balls can be stacked at any time.

- 1-4:* 1-4 extra balls Default: 2 extra balls

**DRONE MYSTERY**

**Drone Mystery Advance:** specify the number of Drone Package Delivery Progress light advances for each "rubber" switch hit.

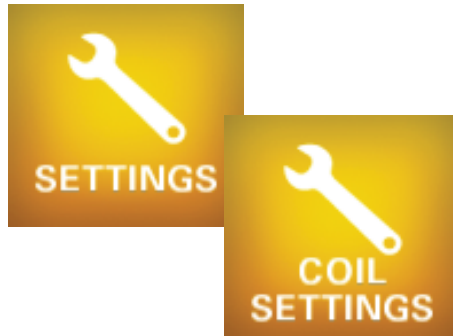
- 1-3:* 1-3 light advances Default: 1 light advance











## Coil Settings

When you enter the **Coil Settings** menu, the LCD monitor will display the screen shown in figure B27. Settings that have been changed from factory defaults are displayed in red. Default settings are displayed in green, but only when a menu item is highlighted. Menu items that cannot be altered are displayed in gray. You can scroll through menu items with the **Up/+** and **Down/-** buttons; press **Enter** to select an item you would like to change. Use the **Up/+** and **Down/-** buttons to alter the highlighted data value, then press **Enter** to accept the new value. Press **Back/Escape** to escape from a selected menu item without saving changes.

From the **Coil Settings** menu, virtually every single coil strength in the game is adjustable. This feature allows the owner/operator to fine tune game play and operation for specific uses.

**CAUTION:** Be careful when adjusting the values in this menu; making certain coils too strong can result in breakage or excessive wear on certain parts of the game.

To exit the **Coil Settings** menu at any time, press the **Back/Escape** button.

**TROUGH**

**Trough VUK Strength:** specify the firing strength for the trough VUK coil.  
1-32: 1-32 firing strength Default: 14

**Auto-Launch Strength:** specify the firing strength for the ball Auto-Launch coil.  
1-32: 1-32 firing strength Default: 20

**Trough: Restrict Kickout on Error:** specify whether or not to restrict ball kickout and game start functions when a trough error is encountered.

YES: restrict ball kickout/start functions	Default: YES
NO: do not restrict ball kickout/start functions	



**Figure B27. Coil Settings screen.**

## GENERAL

**Kickouts: Restrict Kickout on Error:** specify whether or not to restrict ball kickouts on other devices when an opto switch failure is encountered.

YES: restrict ball kickouts Default: YES

*NO*: do not restrict ball kickouts

**Maximum Shaker Strength:** specify the strength for the shaker motor.

*OFF*: disable the shaker motor                      Default: MEDIUM

*LOW*: low strength

*MEDIUM*: medium strength

*HIGH*: high strength

*EXTREME*: extreme strength (adjust to EXTREME at your own risk!)

## FLIPPERS

**Left Flipper Strength:** specify the firing strength for the left flipper power coil.

12-26: 12-26 firing strength Default: 21

**Right Flipper Strength:** specify the firing strength for the right flipper power coil.

12-26: 12-26 firing strength Default: 21

**Upper Right Flipper Strength:** specify the firing strength for the upper right flipper power coil.

10-20: 10-20 firing strength Default: 15

## BUMPERS

**Left Bumper Strength:** specify the firing time for the left pop bumper coil.

15-30: 15-30 milliseconds Default: 20 milliseconds

**Right Bumper Strength:** specify the firing time for the right pop bumper coil.

15-30: 15-30 milliseconds Default: 20 milliseconds

**Lower Bumper Strength:** specify the firing time for the lower pop bumper coil.

15-30: 15-30 milliseconds      Default: 20 milliseconds

## SLINGSHOTS

**Left Slingshot Strength:** specify the firing time for the left slingshot coil.

30-60: 30-60 milliseconds      Default: 48 milliseconds

**Right Slingshot Strength:** specify the firing time for the right slingshot coil.

30-60: 30-60 milliseconds Default: 48 milliseconds

## KICKERS/EJECTS

**Skill Shot Kicker Strength:** specify the firing strength for the skill shot big kick coil.

4-24: 4-24 firing strength Default: 20

**Phone Scoop Eject Strength:** specify the firing strength for the Smartphone scoop eject coil.

12-24: 12-24 firing strength Default: 17

**STATION 3 Lock Release Time:** specify the amount of time (in milliseconds) to hold the STATION 3 lock release open to release a ball from the lock.

150-500: 150-500 milliseconds Default: 250 milliseconds

## KICKBACK

**Kickback Strength:** specify the firing time (in milliseconds) for the kickback coil.

6-32: 6-32 milliseconds Default: 6 milliseconds

**Kickback Delay:** specify the amount of time (in milliseconds) to delay kicking the kickback coil.

0-60: 0-60 milliseconds Default: 40 milliseconds





To exit the **High Score Settings** menu at any time, press the **Back/Escape** button.

**Armageddon Champ Credits:** specify the number of credits awarded for Armageddon Champ.  
0-10: 0-10 credits Default: 0 credits

**Combo Champ Credits:** specify the number of credits awarded for Combo Champ.  
0-10: 0-10 credits Default: 0 credits

**High Voltage Champ Credits:** specify the number of credits awarded for High Voltage Champ.  
0-10: 0-10 credits Default: 0 credits

**Drones Gone Wild Champ Credits:** specify the number of credits awarded for Drones Gone Wild Champ.

<i>0-10:</i> 0-10 credits	Default: 0 credits
---------------------------	--------------------

**Monkey Wrench Champ Credits:** specify the number of credits awarded for Monkey Wrench Champ.  
0-10: 0-10 credits Default: 0 credits

**Quantum Theater Multiball Champ Credits:** specify the number of credits awarded for Quantum Theater Multiball Champ.

0-10: 0-10 credits	Default: 0 credits
--------------------	--------------------

**Keep High Scores:** specify whether the game will maintain a table of high scores or not.  
*ON*: record high scores Default: ON  
*OFF*: do not record high scores

- High Score Award:** specify the award for achieving a high score during a game.  
*FREE GAME:* a free game Default: FREE GAME  
*AUDIT:* a predefined number of points
- High Score Name Length:** specify the maximum number of characters a player can enter for H.S.T.D..  
*3, 11:* 3 or 11 characters Default: 11
- H.S.T.D. Reset Every:** specify how often (in number of games) high scores will be reset.  
*OFF:* never reset high scores Default: OFF  
*200-10000:* 200-10,000 games
- Champion Credits:** specify the number of credits awarded for the Grand Champion score.  
*0-10:* 0-10 credits Default: 1 credit
- H.S.T.D. 1 Credits:** specify the number of credits awarded for high score to date #1.  
*0-10:* 0-10 credits Default: 1 credit
- H.S.T.D. 2 Credits:** specify the number of credits awarded for high score to date #2.  
*0-10:* 0-10 credits Default: 1 credit
- H.S.T.D. 3 Credits:** specify the number of credits awarded for high score to date #3.  
*0-10:* 0-10 credits Default: 1 credit
- H.S.T.D. 4 Credits:** specify the number of credits awarded for high score to date #4.  
*0-10:* 0-10 credits Default: 1 credit
- H.S.T.D. 5 Credits:** specify the number of credits awarded for high score to date #5.  
*0-10:* 0-10 credits Default: 0 credits
- H.S.T.D. 6 Credits:** specify the number of credits awarded for high score to date #6.  
*0-10:* 0-10 credits Default: 0 credits
- H.S.T.D. 7 Credits:** specify the number of credits awarded for high score to date #7.  
*0-10:* 0-10 credits Default: 0 credits
- H.S.T.D. 8 Credits:** specify the number of credits awarded for high score to date #8.  
*0-10:* 0-10 credits Default: 0 credits

- Default Grand Champ:** specify the default Grand Champion score.  
*500000-1000000:* 500,000-1,000,000 points Default: 500,000 points
- Default H.S.T.D. 1:** specify the default high score to date #1.  
*400000-900000:* 400,000-900,000 points Default: 400,000 points
- Default H.S.T.D. 2:** specify the default high score to date #2.  
*300000-800000:* 300,000-800,000 points Default: 300,000 points
- Default H.S.T.D. 3:** specify the default high score to date #3.  
*250000-700000:* 250,000-700,000 points Default: 250,000 points
- Default H.S.T.D. 4:** specify the default high score to date #4.  
*200000-600000:* 200,000-600,000 points Default: 200,000 points
- Default H.S.T.D. 5:** specify the default high score to date #5.  
*150000-500000:* 150,000-500,000 points Default: 150,000 points
- Default H.S.T.D. 6:** specify the default high score to date #6.  
*125000-400000:* 125,000-400,000 points Default: 125,000 points
- Default H.S.T.D. 7:** specify the default high score to date #7.  
*100000-250000:* 100,000-250,000 points Default: 100,000 points
- Default H.S.T.D. 8:** specify the default high score to date #8.  
*75000-200000:* 75,000-200,000 points Default: 75,000 points
- DAILY HIGH SCORES**
- Keep Daily High Scores:** specify whether the game will maintain a table of high scores or not.  
*ON:* track& display daily high scores Default: ON  
*OFF:* disable the daily high scores feature
- Minimum Score:** specify the minimum score to qualify for the daily high scores table.  
*10000-100000:* 10,000-100,000 points Default: 20,000 points

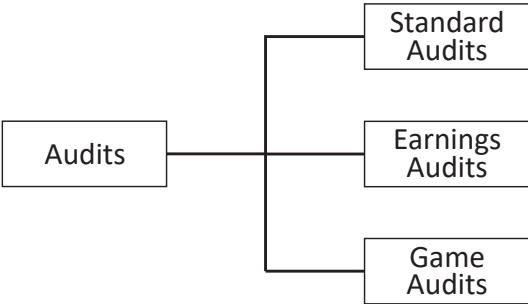


Figure B29. Audits menu tree.

## B.4 Audits

The **Audits** menu (see figure B29 for an outline) allows the user to view, monitor and/or track game usage and earnings over a specific time period (since audits were last cleared and over the lifetime of the game).

**Standard Audits** - view game-related totals such as free plays, 1-, 2-, 3- & 4-player games started, extra balls, replays, matches, etc.

**Earnings Audits** - view totals for paid credits, free plays, service credits, pricing tier purchases and coins accepted in each slot.

**Game Audits** - view totals for various shots made (targets hit or switches closed) and modes started and/or completed in the game.

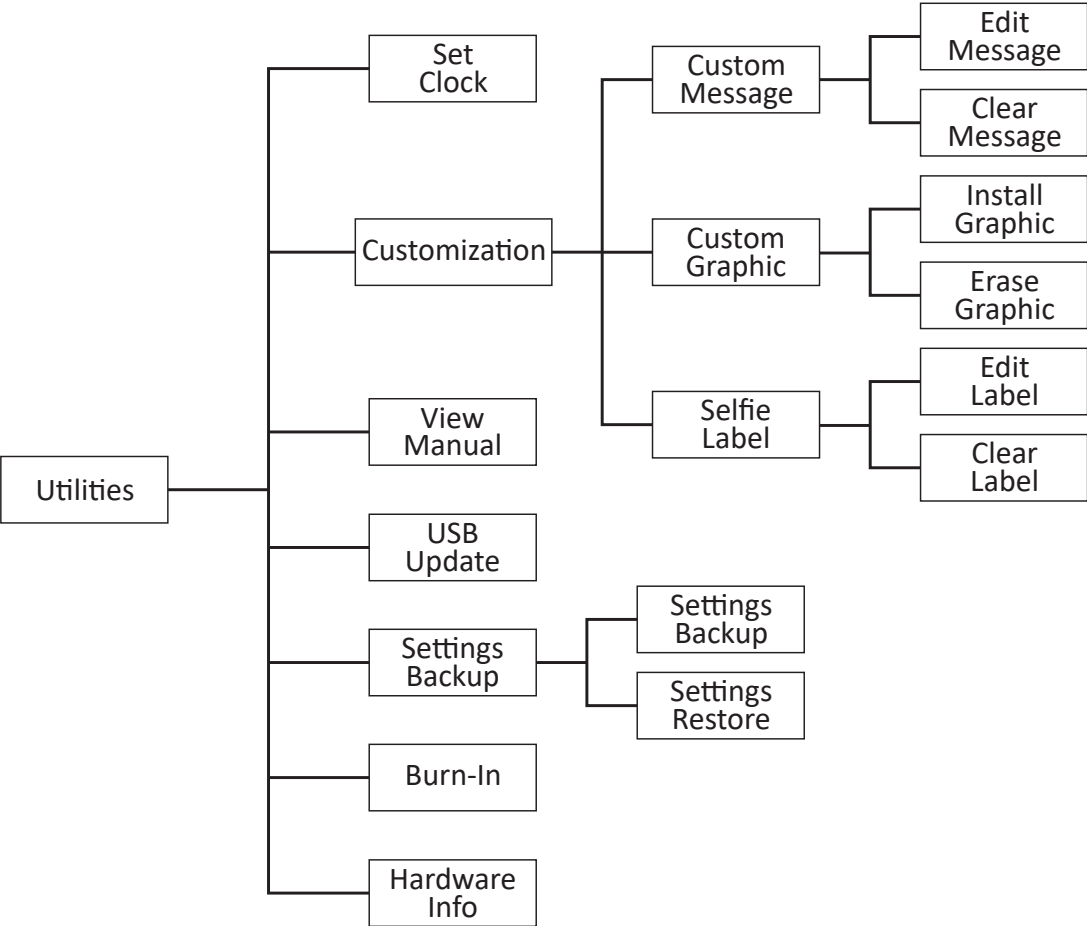


Figure B30. Utilities menu tree.

## B.5 Utilities

The **Utilities** menu (see figure B30 for an outline) allows the user to manage and maintain the game by setting the internal clock, entering messages/graphics and through commonly-used routines like burn-in and software update. There are also utility screens to save/restore settings and view this manual and/or game hardware information.

- Set Clock** - adjust the system date and time.
- Customization** - customize your game: enter/modify a message for the game to display in attract mode (**Custom Message > Edit Message**), clear an existing message (**Custom Message > Clear Message**), upload/select an image (**Custom Graphic > Install Graphic**) for the game to display in attract mode, erase a previously uploaded graphic (**Custom Graphic > Erase Graphic**), enter/modify a label for the game's selfie pictures (**Selfie Label > Edit Label**) or clear an existing selfie picture label with the **Selfie Label > Clear Label** utility.
- View Manual** - display/navigate the PDF version of the Dialed In manual on the game's LCD screen.
- USB Update** - update the game's software via a USB memory stick. Note: The update must be downloaded from the JJP® support website (<https://www.jerseyjackpinball.com/support/>), using a separate computer.
- Settings Backup** - backup (**Settings Backup**) and/or restore (**Settings Restore**) settings, audits, replay information and custom message for the game.
- Burn-In** - run a preset routine to exercise all of the critical devices in the game, repeatedly, to test for reliable, long-term system operation.
- Hardware Info** - view game hardware characteristics such as game serial number, firmware revision levels, motherboard type, display Information, available RAM, processor speed & solid state disk size.





## Set Clock

When you enter the **Set Clock** utility, the LCD monitor will display the screen shown in figure B31. To maneuver to the portion of the display that requires adjustment, use the **Back/Escape** (left) and **Enter** (right) buttons. Use the **Up/+** and **Down/-** buttons to alter the highlighted value, then press the **Start** button to save the time and date, as displayed on the screen.

To exit the **Set Clock** utility, move the cursor to the position shown in Figure B31 (far left), then press the **Back/Escape** button. Note: The **Start** button moves the cursor to this position after saving the time/date.

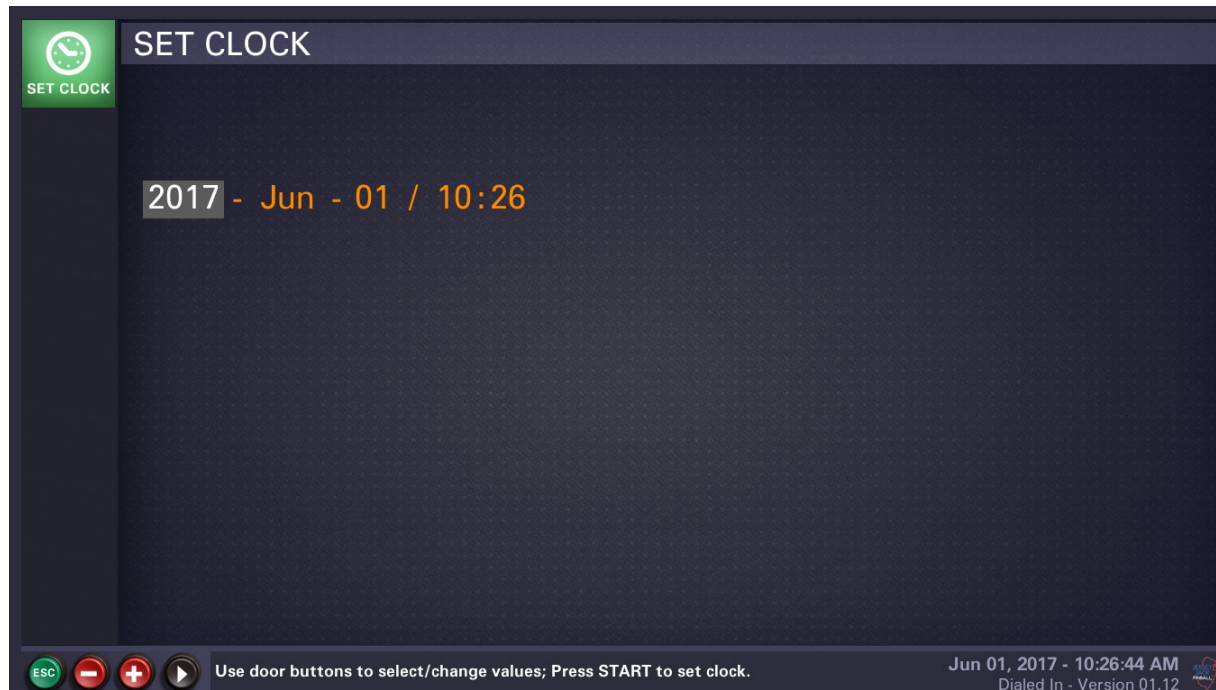


Figure B31. Set Clock utility screen.



## Edit Message

Use the **Custom Message** utility to enter a message that will be displayed on the LCD monitor, periodically, during the game’s attract mode. The message is entered or modified using the **Edit Message** utility.

When you enter the **Edit Message** utility, the LCD monitor will display the screen shown in figure B32. To move the cursor around in the message, use the **Back/Escape** (move left) and **Enter** (move right) buttons. Use the **Up/+** and **Down/-** buttons to change the highlighted character, then press the **Start** button to save your custom message, as displayed on the screen.

To exit the **Edit Message** utility, move the cursor to the position shown in Figure B32 (the upper left hand corner), then press the **Back/Escape** button. Note: The **Start** button moves the cursor to this position after saving the message.

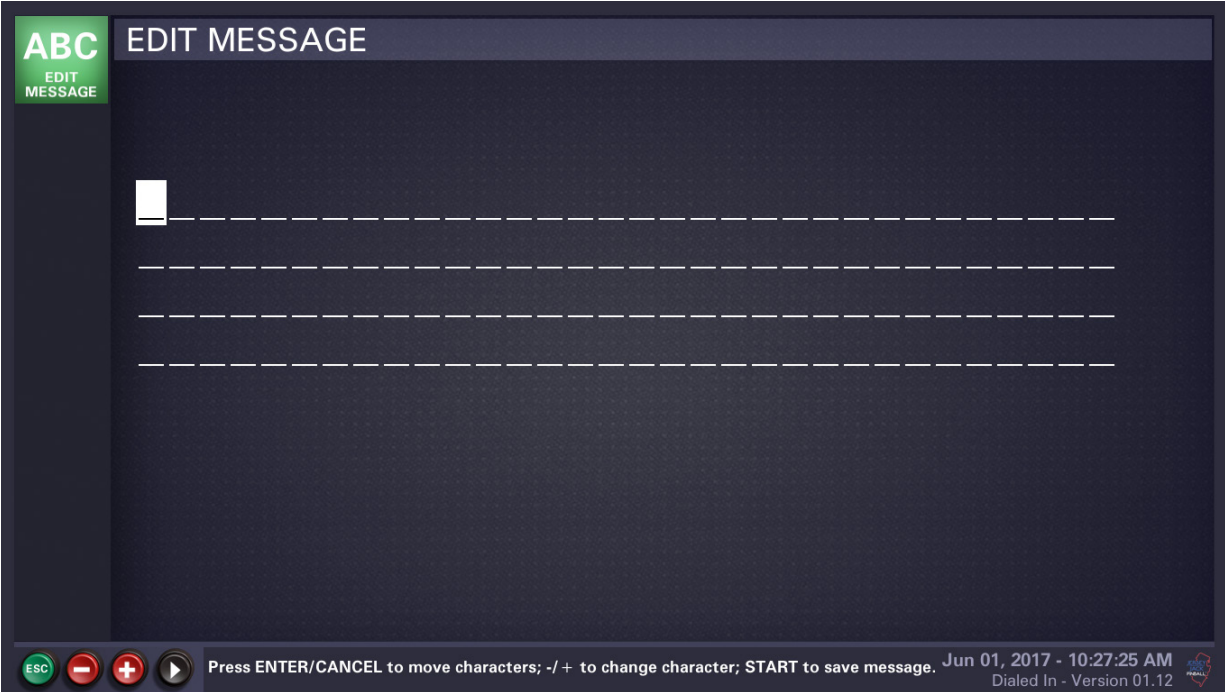


Figure B32. Edit Message utility screen.



## Clear Message

Use the **Clear Message** utility to delete a previously entered custom message.

When you enter the **Clear Message** utility, the LCD monitor will display the screen shown in figure B33. To clear the current custom message, press the **Enter** button. You will be prompted to hit the **Start** button to confirm and complete the operation.

To exit the **Clear Message** utility at any time, press the **Back/Escape** button.

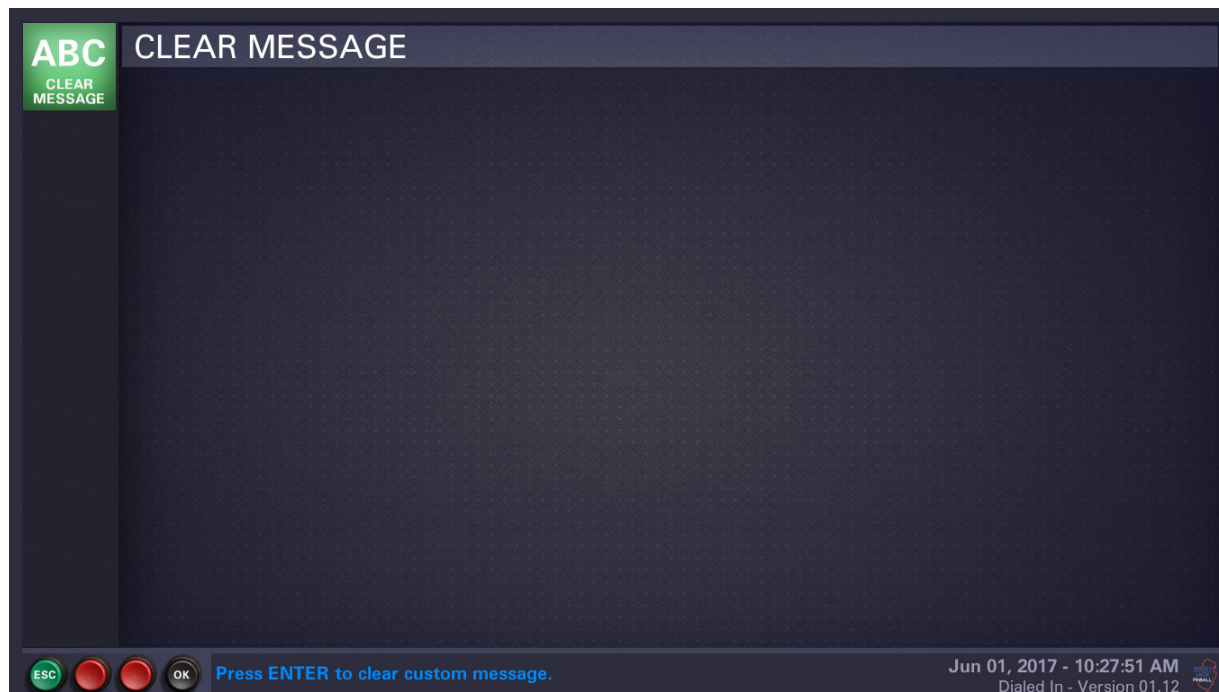


Figure B33. Clear Message utility screen.



## Install Graphic

Use the **Custom Graphic** utility to install an image that will be displayed on the LCD monitor, periodically, during the game’s attract mode. The custom image is uploaded or changed using the **Install Graphic** utility.

Note: The image must be loaded onto a USB memory stick, using a separate computer. It must be in PNG or JPG format and under 2MB in size. Create a folder named “pinballimages” in the root directory of the USB stick, then copy your graphic(s) into the folder. Power up the game, open the coin door, and use the diagnostics buttons to enter the **Install Graphic** utility; the LCD monitor will display the screen shown on the left in figure B34.

Locate the end of the USB extension cable, just inside the open coin door (to the left of the coin box). Remove the Bluetooth dongle from the connector at the end of the cable and set it aside. Fully insert the USB stick in its place (if your USB stick is equipped with an “in-use” light, it will illuminate). The screen on the right in figure B34 will come up automatically, showing a listing of the available graphics in your USB stick’s “pinballimages” folder.

Use the **Up/+** and **Down/-** buttons to select the graphic you wish to install, then press the **Enter** button to complete the operation.

To exit the **Install Graphic** utility at any time, press the **Back/Escape** button.

If you removed the game's Bluetooth dongle, plug it back into the end of the USB extension cable.

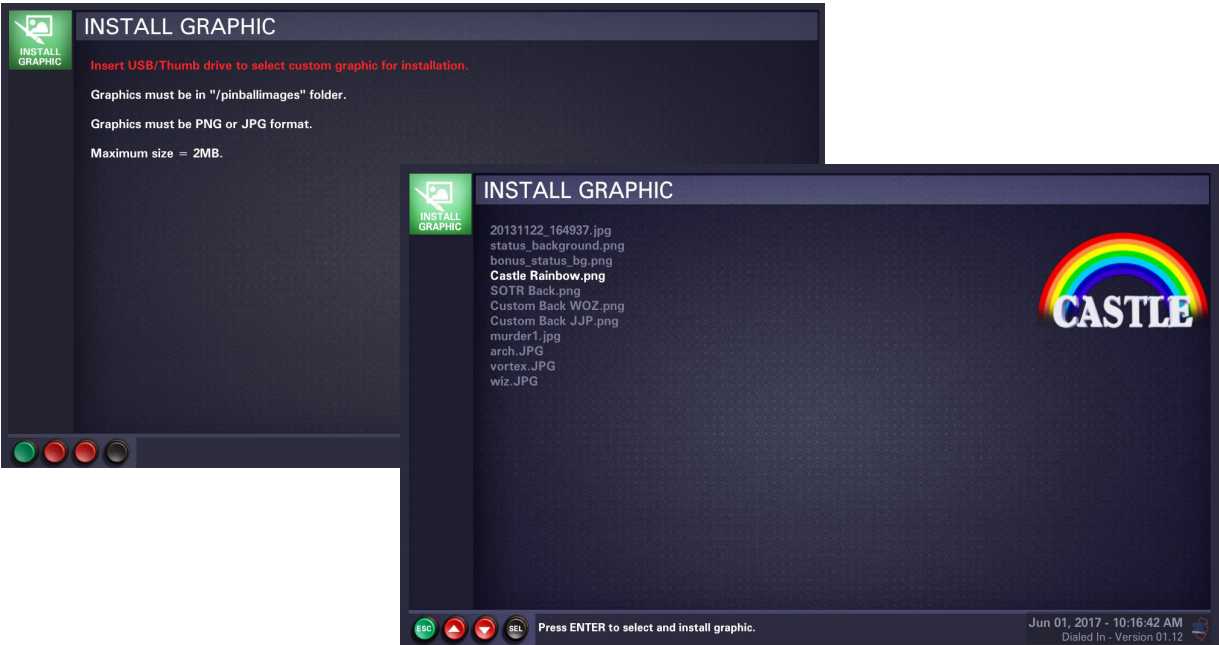


Figure B34. Install Graphic utility screens.





## Erase Graphic

Use the **Erase Graphic** utility to delete a previously installed custom graphic.

When you enter the **Erase Graphic** utility, the LCD monitor will display the screen shown in figure B35. To clear the current custom graphic, press the **Enter** button. You will be prompted to hit the **Start** button to confirm and complete the operation.

To exit the **Erase Graphic** utility at any time, press the **Back/Escape** button.

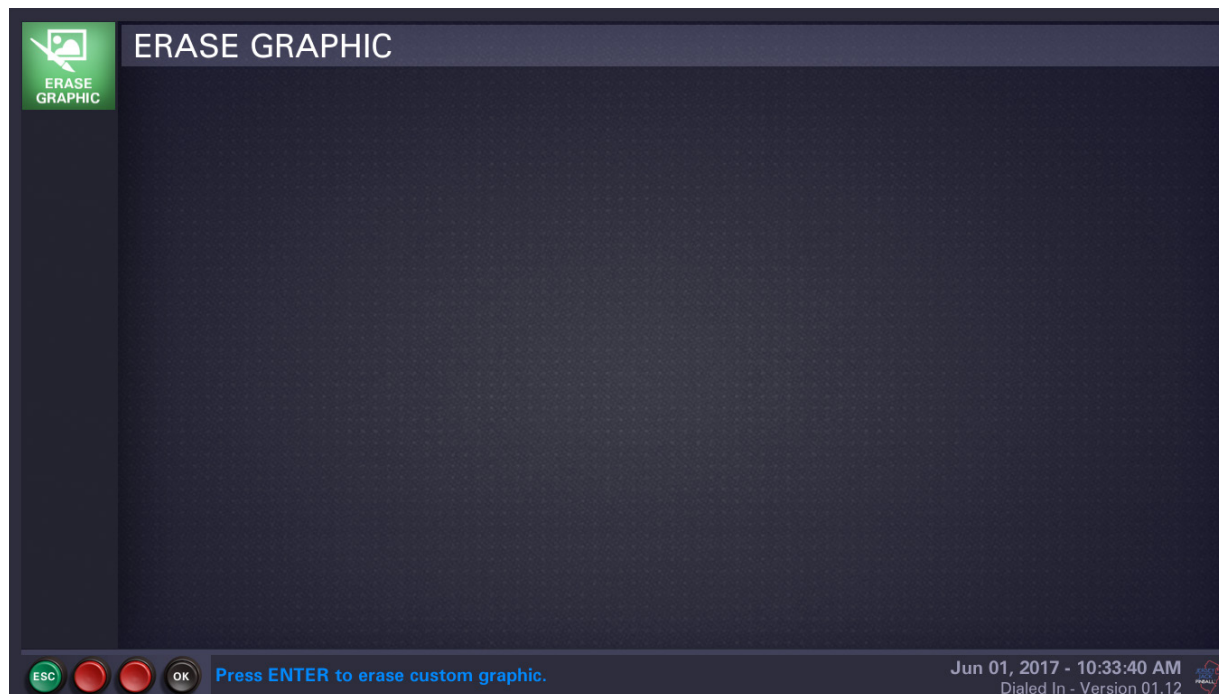


Figure B35. Erase Graphic utility screen.



# Edit Label

Use the **Edit Label** utility to enter the label that will be displayed on the bottom of selfie pictures during the game's Selfie Mode. The label is entered or modified using the **Edit Label** utility.

When you enter the **Edit Label** utility, the LCD monitor will display the screen shown in figure B36. To move the cursor around in the label, use the **Back/Escape** (move left) and **Enter** (move right) buttons. Use the **Up/+** and **Down/-** buttons to change the highlighted character, then press the **Start** button to save your selfie label, as displayed on the screen.

To exit the **Edit Label** utility, move the cursor to the position shown in Figure B36 (the far left edge), then press the **Back/Escape** button. Note: The **Start** button moves the cursor to this position after saving the message.



Figure B36. Edit Label utility screen.



## Clear Label

Use the **Clear Label** utility to delete a previously entered selfie label.

When you enter the **Clear Label** utility, the LCD monitor will display the screen shown in figure B37. To clear the current selfie label, press the **Enter** button. You will be prompted to hit the **Start** button to confirm and complete the operation.

To exit the **Clear Label** utility at any time, press the **Back/Escape** button.

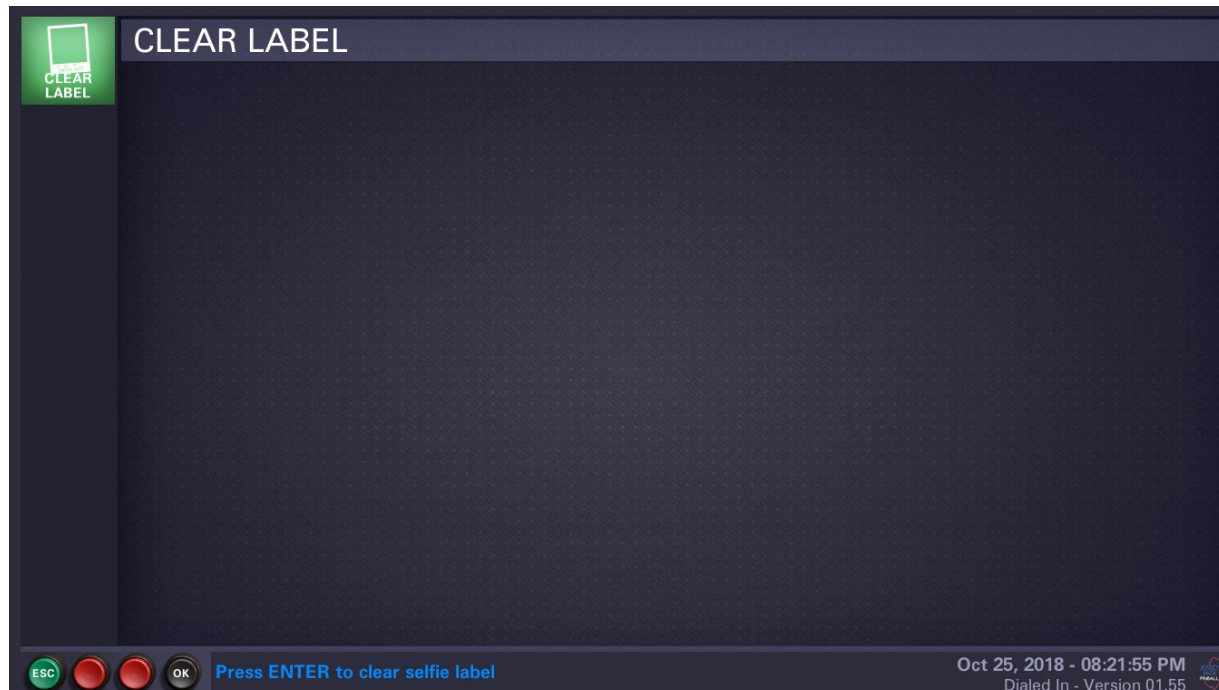


Figure B37. Clear Label utility screen.



## View Manual

When you enter the **View Manual** utility, the LCD monitor will display the screen shown in figure B38. To view the Dialed In Operations Manual (this document), press the **Enter** button. While viewing, use the **Up/+** and **Down/-** buttons to move from page to page; use the **Enter** button to zoom in on the current page. When zoomed in, use the **Up/+** and **Down/-** buttons to move around the current page; use the **Back/Escape** button to cancel the zoom function.

To exit the **View Manual** utility, press the **Back/Escape** button while in the viewing mode.

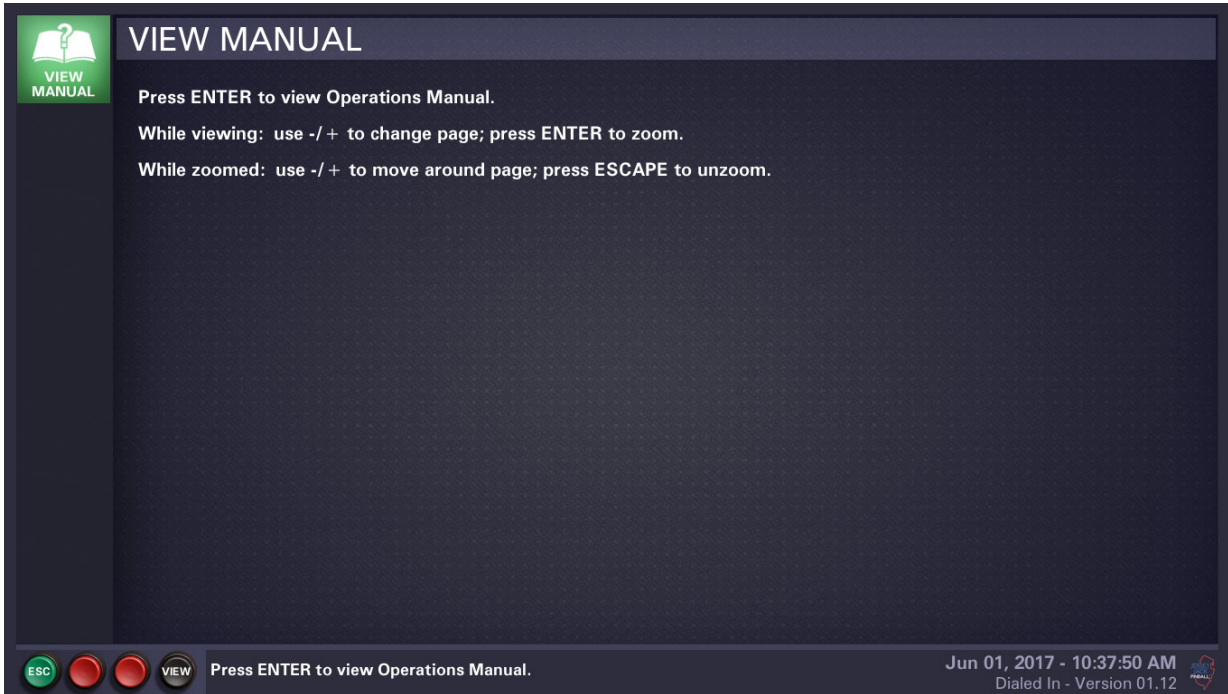


Figure B38. View Manual utility screen.





## USB Update

Use the **USB Update** utility to apply a Dialed In delta software update to your game. Note: The update must be downloaded from the JJP® support website (<https://www.jerseyjackpinball.com/support/>), using a separate computer. Copy the “di\_update” folder from your computer onto an empty USB memory stick (i.e. it should be the only folder on the stick). Power up the game, open the coin door, and use the diagnostics buttons to enter the **USB Update** utility; the LCD monitor will display the screen shown in figure B39.

Locate the end of the USB extension cable, just inside the open coin door (to the left of the coin box). Remove the Bluetooth dongle from the connector at the end of the cable and set it aside. Fully insert the USB stick in its place (if your USB stick is equipped with an “in-use” light, it will illuminate).

To attempt the USB delta update, press the **Enter** button. The game’s playfield and LCD monitor will go blank/dark for approximately 15-30 seconds (depending upon the size of the update). You can abort the update process by pressing the **Back/Escape** button. When the game and monitor come back to life, verify that the delta update installed successfully by re-entering the Dialed In Menu System. The installed software version is displayed in the lower, right hand corner of most menu system screens.

When you’re satisfied that the delta update was applied correctly, remove the USB stick from the end of the USB extension cable (there is no need to power down the game before performing this action). To exit the **USB Update** utility, press the **Back/Escape** button.

If you removed the game's Bluetooth dongle, plug it back into the end of the USB extension cable.

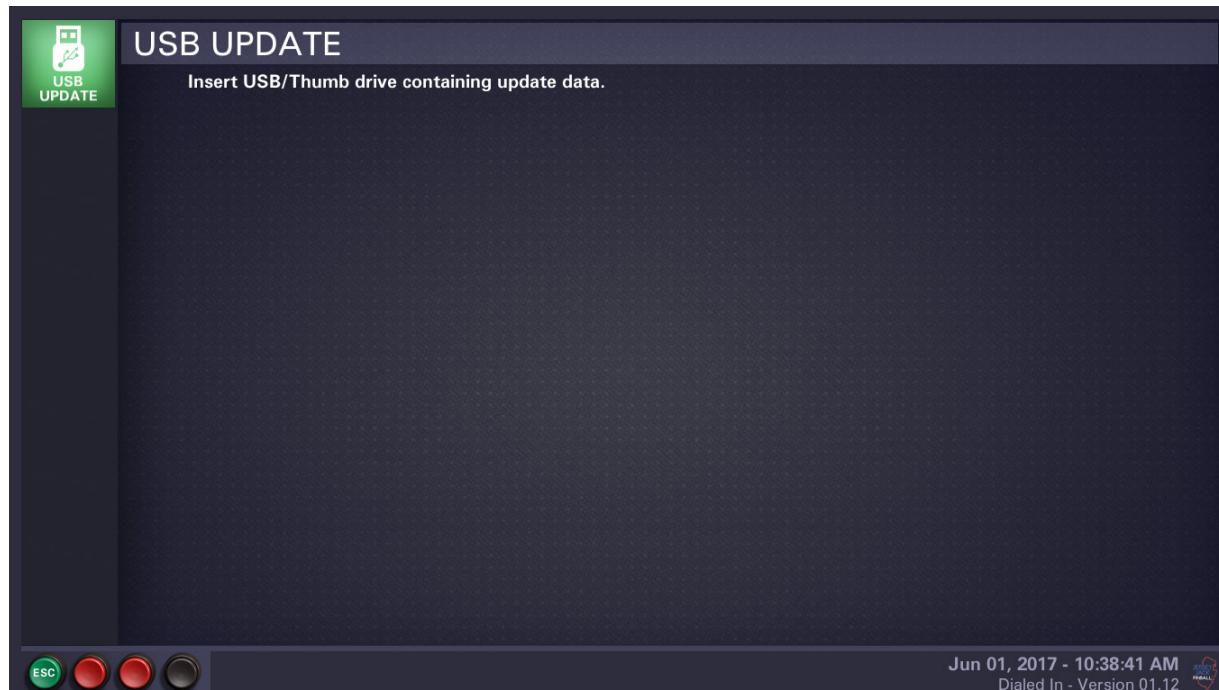


Figure B39. USB Update utility screen.



## Settings Backup

The **Settings Backup** & **Settings Restore** utilities allow you to quickly and easily backup & restore your game’s settings, audits, reports, replay information and custom message. Your settings will be stored on a USB memory stick.

When you enter the **Settings Backup** utility, the LCD monitor will display the screen shown in figure B40. Locate the end of the USB extension cable, just inside the open coin door (to the left of the coin box). Remove the Bluetooth dongle from the connector at the end of the cable and set it aside. Fully insert the USB stick in its place (if your USB stick is equipped with an “in-use” light, it will illuminate).

Note: The saved settings file is unique to each game (allowing you to use the same USB stick to backup settings for several different games, without fear of overwriting anything). The file is also time- and date-stamped, using the game’s internal clock.

Press the **Enter** button to perform the backup. If there is an existing settings file for the game on the USB stick, you will be prompted to hit the **Start** button to confirm and complete overwriting the backup.

To exit the **Settings Backup** utility, press the **Back/Escape** button.

If you removed the game's Bluetooth dongle, plug it back into the end of the USB extension cable.

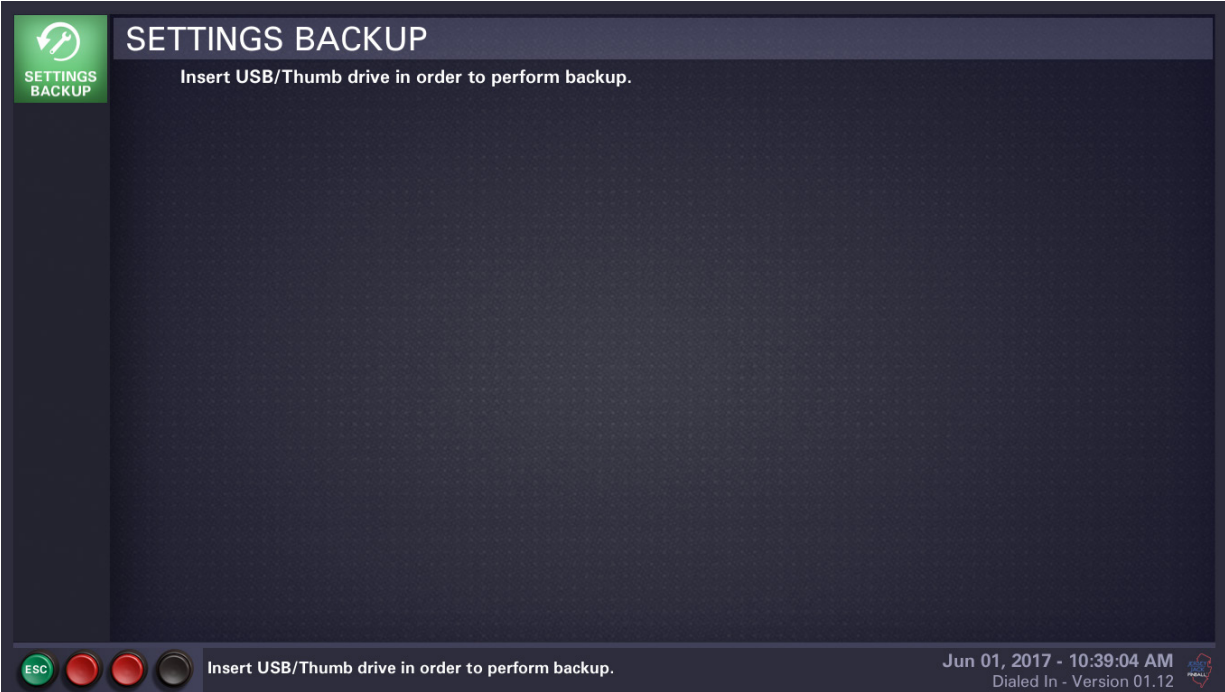


Figure B40. Settings Backup utility screen.



## Settings Restore

The **Settings Backup** & **Settings Restore** utilities allow you to quickly and easily backup & restore your game's settings, audits, reports, replay information and custom message. Your settings will be restored from a USB memory stick.

When you enter the **Settings Restore** utility, the LCD monitor will display the screen shown in figure B41. Locate the end of the USB extension cable, just inside the open coin door (to the left of the coin box). Remove the Bluetooth dongle from the connector at the end of the cable and set it aside. Fully insert the USB stick in its place (if your USB stick is equipped with an "in-use" light, it will illuminate).

Note: The saved settings file is unique to each game (so you can use the same USB stick to backup settings for several different games, without fear of overwriting anything). The file is also time- and date-stamped, using the game's internal clock.

If a settings file for the game is found on the USB stick, its date and time will be displayed as shown in figure B41. Press the **Enter** button to perform the settings restore operation.

To exit the **Settings Restore** utility, press the **Back/Escape** button.

If you removed the game's Bluetooth dongle, plug it back into the end of the USB extension cable.



Figure B41. Settings Restore utility screen.



## Burn In

The **Burn In** utility allows you to repeatedly exercise/test virtually all of the critical devices in the Dialed In game. When you enter the utility, the game will cycle through a preset routine to simultaneously fire coils, activate magnets, run motors, flash colors on the LCD screen, play sounds, etc. - indefinitely.

To exit the **Burn In** utility at any time, press the **Back/Escape** button.





## Hardware Info

Use the **Hardware Info** utility to view your game's hardware characteristics such as serial number, firmware revision levels, motherboard type, available RAM, processor speed & solid state disk size. When you enter the **Hardware Info** utility, the LCD monitor will display the screen shown in figure B42.

To exit the **Hardware Info** utility at any time, press the **Back/Escape** button.



Figure B42. Hardware Info utility screen.

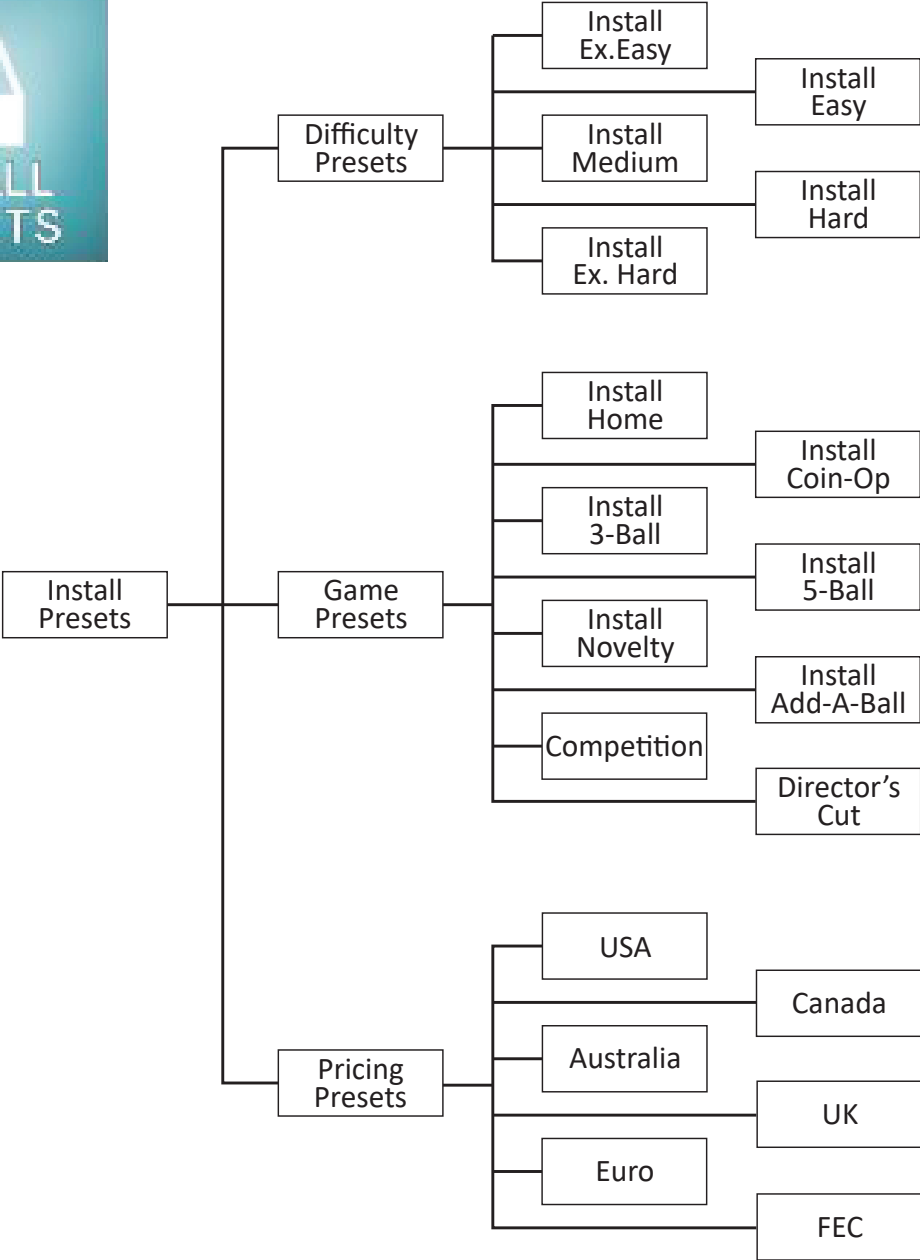


Figure B43. Install Presets menu tree.

## B.6 Install Presets

The **Install Presets** menu (see figure B43 for an outline) allows the user to quickly make *quantum*, predefined changes to game play settings (as opposed to changing settings individually, in other sub-menus).

**Difficulty Presets** - change a predefined group of game/system settings to quickly make the game easier or more difficult to play. The difficulty level options are listed in figure B43.

**Game Presets** - change a predefined group of game/system settings to quickly configure the game to play in one of the standard modes listed in figure B43.

**Pricing Presets** - change a predefined group of pricing settings to quickly configure the game to accept coinage from one of the countries listed in figure B43.



# B.7 Reports

The **Reports** menu (see figure B44 for an outline) allows the user to view logs and graphs of events of interest in the game including bad switch alerts, device errors, game power-ups, service credits, game statistics, awards, etc.

**Dump Stats** - dump game statistics to a USB drive for records or detailed, offline analysis.

**Event Logs** - view logs for various system events including when the power was cycled on the game, when the game was started, when the coin door was opened, when service credits were added, when game awards were earned, etc.

**Charts** - view charts of statistics such as games played per day, game times, game scores, etc.

**Error Log** - view the contents of the game’s error log.

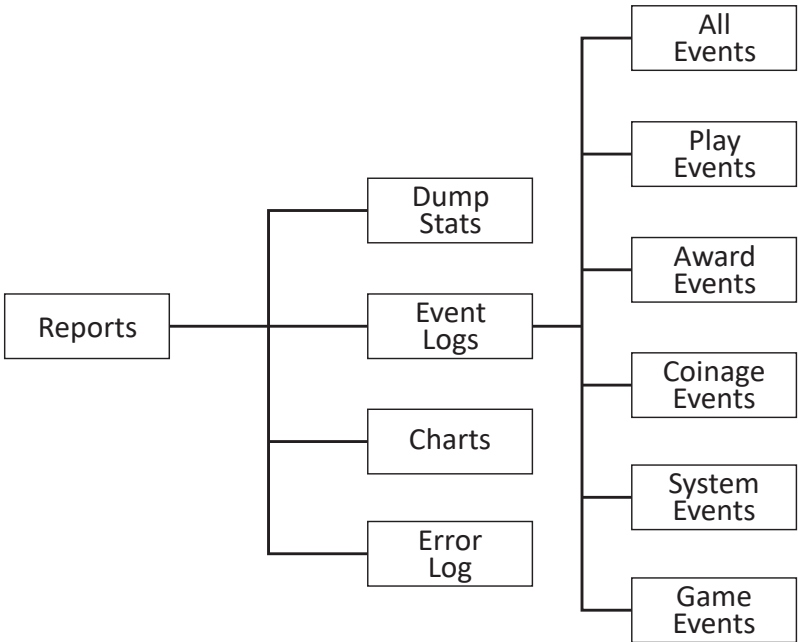


Figure B44. Reports menu tree.

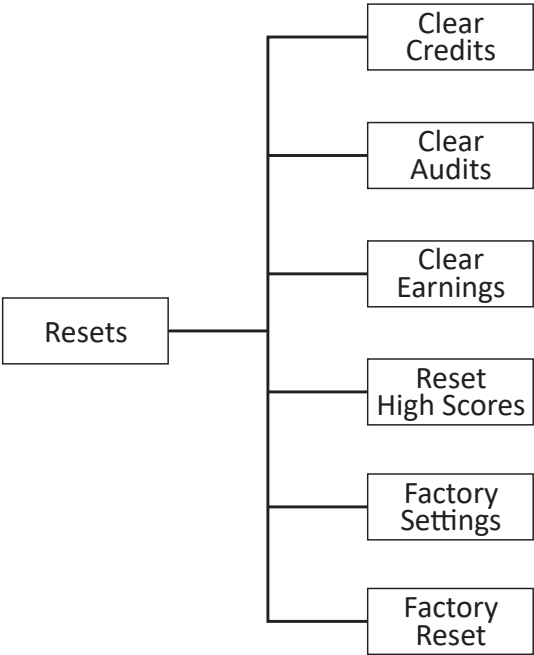
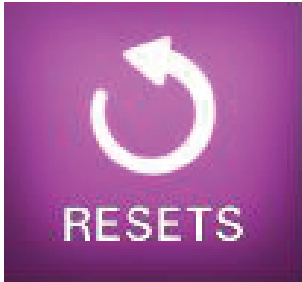


Figure B45. Resets menu tree.

## B.8 Resets

The **Resets** menu (see figure B45 for an outline) allows the user to quickly clear game audits/earnings information and high scores from a single menu.

**Clear Credits** - clear credits from the game.

**Clear Audits** - reset audits data.

**Clear Earnings** - reset earnings data.

**Reset High Scores** - reset high scores to default values (see **High Score Settings** in Section B.3).

**Factory Settings** - reset all software-adjustable settings to the values they originally were given at the factory.

**Factory Reset** - reset factory settings (as above) plus reset audits and alarm counters.

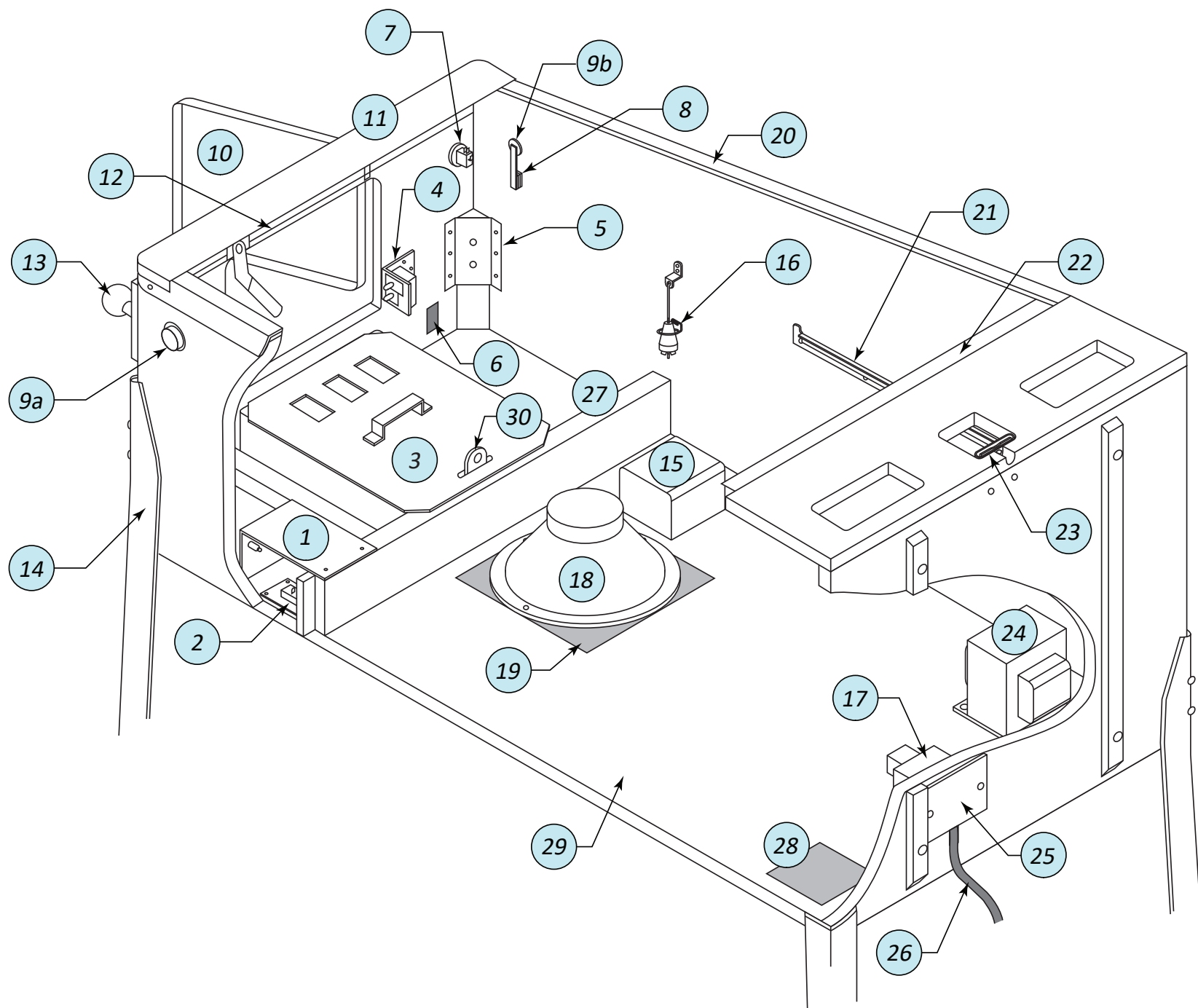




# Section C

## Game Parts Information



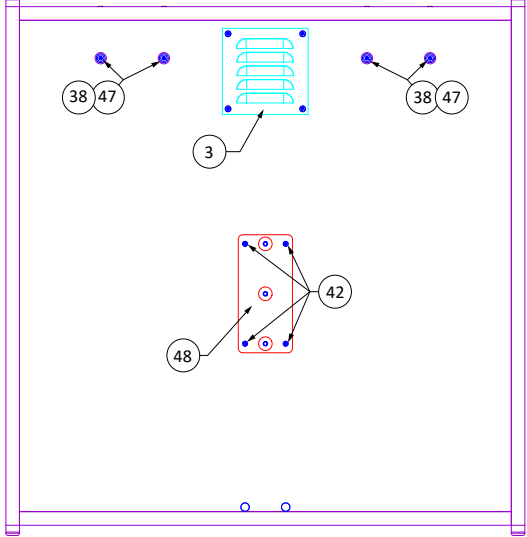
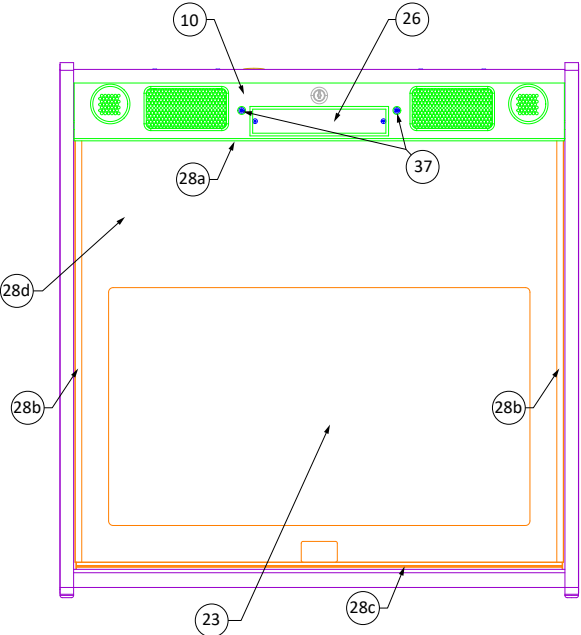
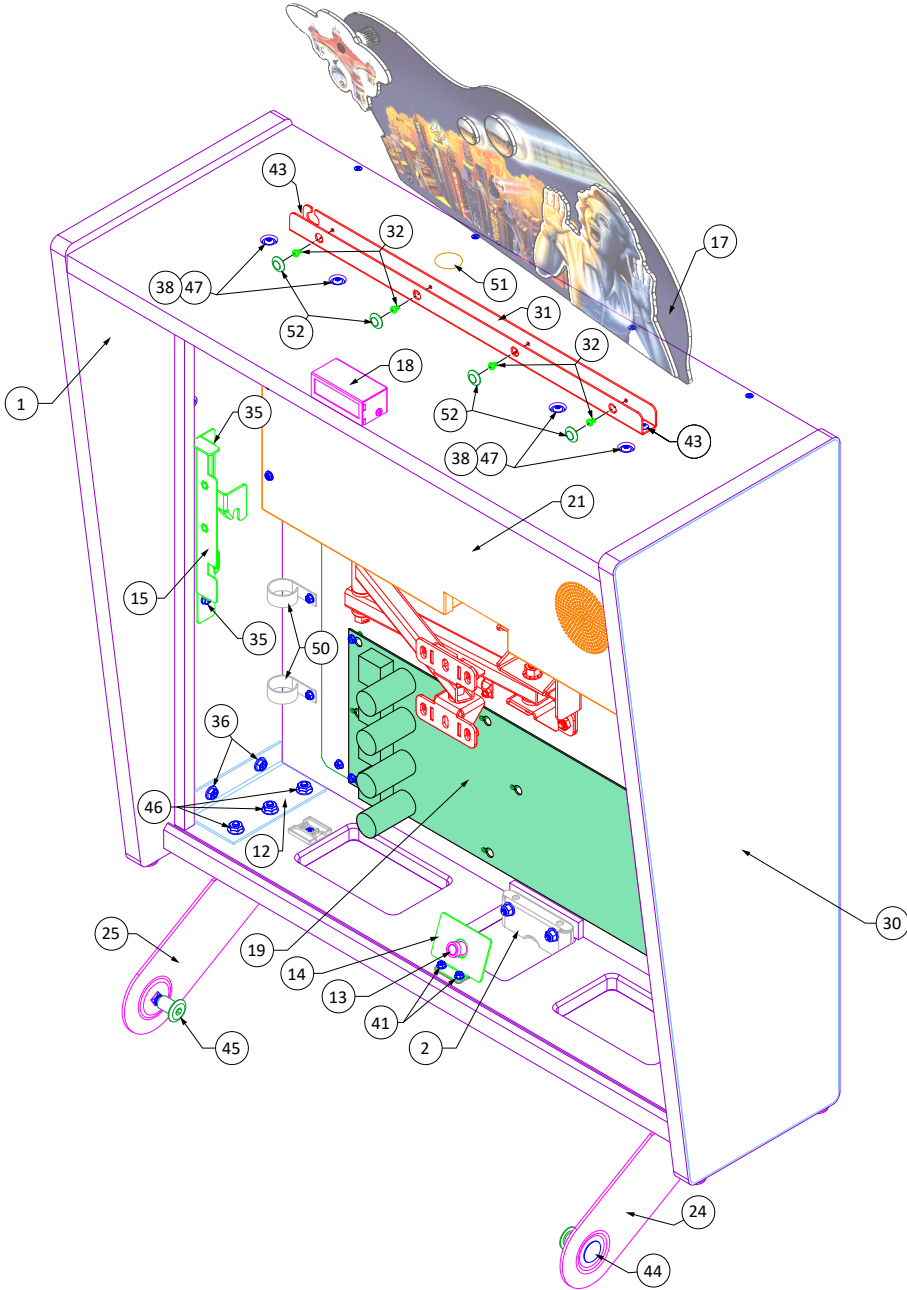
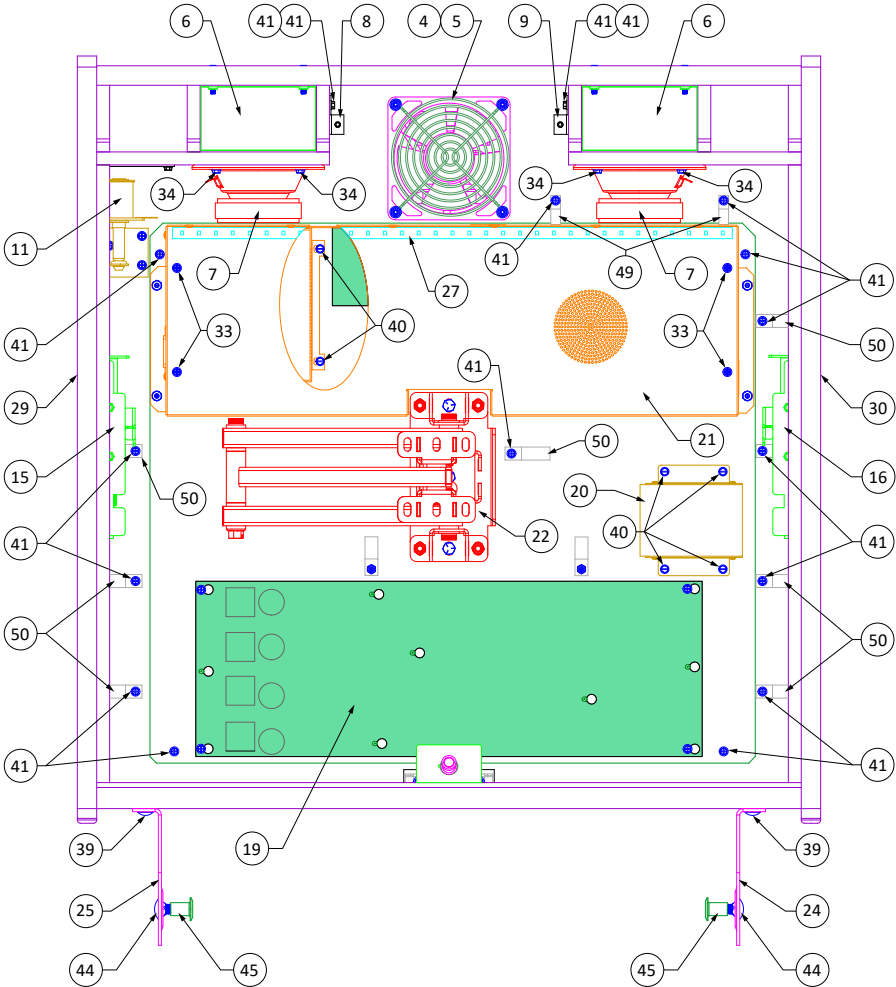


## DI Lower Cabinet Assemblies

### 50-005024-00 (Std), -01 (LE), -02 (CE)

Item	Part Number	Description	Qty	Drawing	Item	Part Number	Description	Qty
1	51-005001-01	Power Box Assy, Front Outlet	1	C-40	18	17-006004-00	Subwoofer Speaker, 8", 8Ω, 40W	1
2	18-007012-00	On/Off Switch Assy	1	-	19	10-000002-00	Cabinet Speaker Grill, 8"	1
3	30-000001-00	Pinball Cashbox, Plastic	1	-	20	CE 42-007008-07	DI Laser Cut Side Rail, Right, DI Purple	1
	10-000011-00	Cashbox Cover, Universal	1	-		CE 42-007007-07	DI Laser Cut Side Rail, Left, DI Purple	1
4	51-000035-00	Door & Interlock Switch Assy	1	-		LE 42-007003-08	Cabinet Side Rail, DI Blue	2
a)	10-000089-00	Door & Interlock Switch Brkt	1	-		Std 42-007003-01	Cabinet Side Rail, Stainless	2
b)	18-003007-01	Safety Interlock Switch, 2/16	1	-	NS	30-008000-00	Cabinet Side Glass Channel	2
c)	18-003008-00	Coin Door Switch	1	-	NS	60-000001-01	Standard Playfield Invisiglass®	1
5	10-000006-00	Cabinet Leg Mtg Brkt	4	-		Std 60-000001-00	Standard Playfield Glass	1
6	51-000064-00	Cabinet Headphone Jack Assy (front of cabinet)	1	C-27	21	10-000033-01	Playfield Support/Slide Brkt, Left	1
Std	10-000197-01	Cabinet Headphone Cover Plate	1	-	NS	10-000033-00	Playfield Support/Slide Brkt, Right	1
7	18-007023-04	Start Button Switch Assy, Recessed, Yellow	1	-	22	30-008001-02	Cabinet Rear Glass Channel, Standard	1
8	18-000005-00	Flipper Leaf Switch, Single Contact (Left)	1	-	23	42-005001-00	Roto-Lock Latch	1
NS	18-000005-01	Flipper Leaf Switch, Double Contact (Right)	1	-	24	16-005000-02	Main Transformer, 2/16	1
9	18-007009-02	Flipper Button Assy, Red	2	-	25	10-000010-01	Line Cord Cover Plate, No Cutout	1
a)	30-000009-02	Flipper Button, Red	2	-	26	19-009000-00	Line Power Cable, USA	1
b)	91-000001-10	Flipper Button PAL Nut	2	-	27	15-000055-00	Bluetooth 4.0 Dongle (at end of USB Cable)	1
10	40-000006-20	Standard USA Coin Door Assy, 12V, No Headphone	1	E-6	28	10-000003-01	Cabinet Vent Hole Grill, 3"	2
11	CE 10-000027-07	Lockdown Bar, Standard, DI Purple	1	-	29	05-000005-00	Cabinet Wood Assy, Standard	1
	LE 10-000027-06	Lockdown Bar, Standard, DI Blue	1	-	30	10-000026-00	Cashbox Lock Brkt	1
	Std 10-000027-00	Lockdown Bar, Standard, Stainless	1	-	NS	61-000007-01	DI Cabinet Decal, Left Side	1
12	10-008001-10	Lockdown Bar Receiver Assy	1	-	NS	CE 30-003009-01	DI CE Cabinet Rad-Cal, Left Side	1
13	CE 51-000087-02	DI Ball Shooter Assy, CE	1	C-28	NS	61-000007-00	DI Cabinet Decal, Right Side	1
	LE 51-000087-01	DI Ball Shooter Assy, LE	1	C-28	NS	CE 30-003009-02	DI CE Cabinet Rad-Cal, Right Side	1
	Std 51-000087-00	DI Ball Shooter Assy, Std	1	C-28	NS	61-003007-00	DI Cabinet Decal, Front	1
14	CE 10-000031-07	Cabinet Leg Assy, 30.5", DI Purple	4	-	NS	CE 30-003009-03	DI CE Cabinet Rad-Cal, Front	1
	LE 10-000031-06	Cabinet Leg Assy, 30.5", DI Blue	4	-	NS	30-000049-08	Nylon Cable Clamp, Open, 1/2"	8
	Std 10-000031-01	Cabinet Leg Assy, 30.5", Chrome	4	-	NS	30-000049-12	Nylon Cable Clamp, Open, 3/4"	10
NS	10-000133-00	Cabinet Leg Brkt, Decal Protector	4	-	NS	30-000049-16	Nylon Cable Clamp, Open, 1"	2
15	51-005027-01	Shaker Motor Assy	1	C-41				
16	51-000028-00	Plumb Bob Tilt Assy	1	C-25				
17	51-005023-00	Line Filter Box Assy	1	C-40				



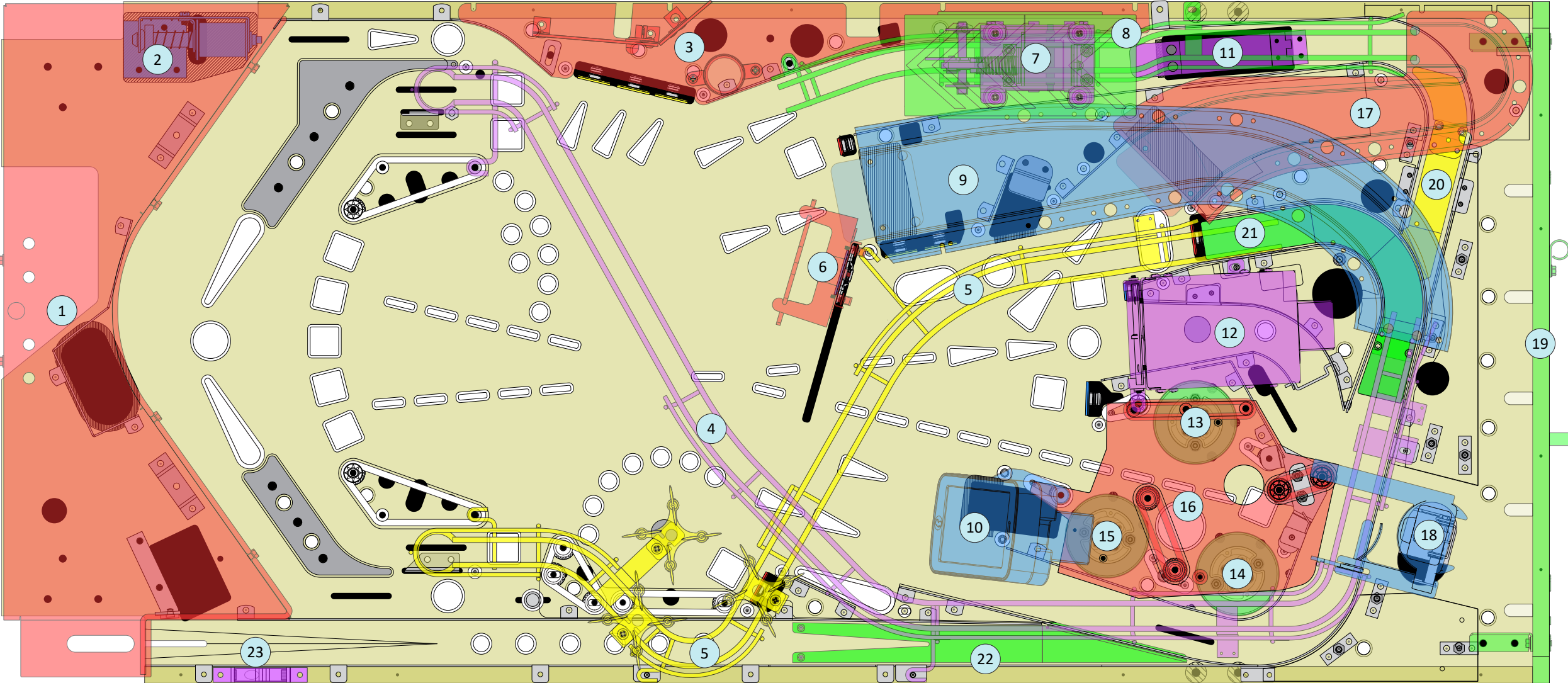




## DI Backbox Assemblies

### 50-005023-00 (Std), -01 (LE), -02 (CE)

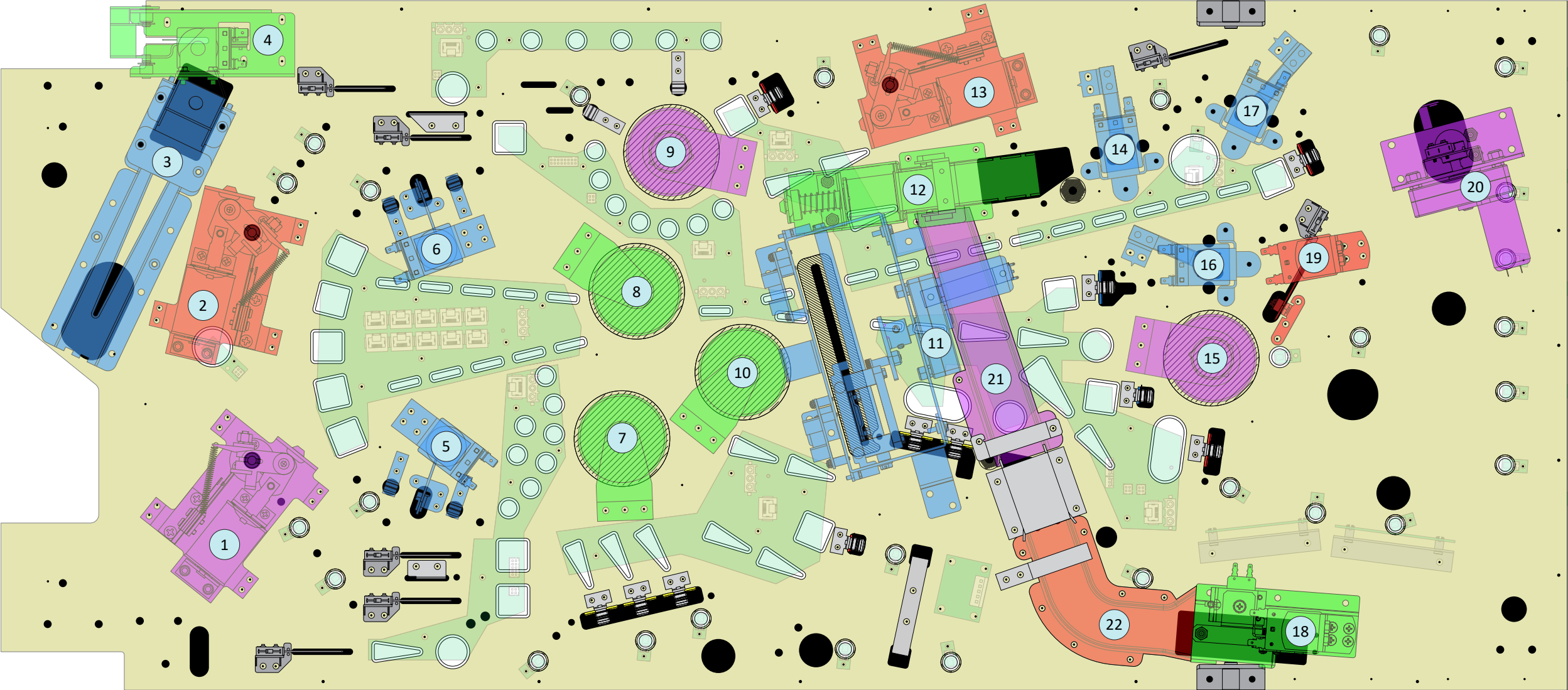
Item	Part Number	Description	Qty	Drawing	Item	Part Number	Description	Qty	
1	05-002003-00	Backbox Wood Assy	1	-	28	51-005046-00	DI Printed Backglass Assy	1	
2	42-005002-00	Roto-Lock Receptacle	1	-	CE	51-005046-01	DI Printed Backglass Assy, CE	1	
3	10-000234-00	Backbox Vent Hole Cover, Louvered	1	-	a)	30-008002-00	Backglass Top Plastic Channel, 26-15/16"	1	
4	51-006013-00	Backbox Fan & Cable Assy	1	-	b)	30-008002-01	Backglass Side Plastic Channel	2	
5	10-000110-01	Fan Guard, 4.69"	1	-	c)	30-008004-00	Backglass Lift Channel	1	
6	10-000201-00	Backbox Speaker Acoustic Plate	2	-	d)	60-000007-00	DI Printed Backglass (-00)	1	
7	17-006003-00	5.25" Midrange Speaker, 8Ω	2	-	CE	60-000007-01	DI Printed Backglass, CE (-01)	1	
8	10-000207-00	Backbox Speaker Bar Mtg Brkt, Left	1	-	29	61-006007-01	DI Backbox Decal, Left Side	1	
9	10-000207-01	Backbox Speaker Bar Mtg Brkt, Right	1	-	CE	30-003009-04	DI CE Backbox Rad-Cal, Left Side	1	
10	51-005053-00	Backbox Speaker Bar Assy, Wood	1	C-45	30	61-006007-00	DI Backbox Decal, Right Side	1	
11	51-000032-01	Knocker Assy, Vertical	1	C-26	CE	30-003009-05	DI CE Backbox Rad-Cal, Right Side	1	
12	10-000034-01	Backbox Inner Corner L Brkt, Extended	2	-	31	CE	51-006010-00	DI CE Backbox Topper Mtg Brkt & Cable Assy	1
13	51-005041-00	USB Camera Assy	1	C-43	32	CE	80-000008-05	8-32 x 5/16" PPH MS	4
14	30-000094-00	USB Camera Cover	1	-	33		80-002008-04	8-32 x 1/4" HWH Phillips MS, Serrated	4
15	10-008003-00	27" LCD Lock/Latch Brkt Assy, Left	1	C-23	34		80-002008-08	8-32 x 1/2" HWH Phillips MS, Serrated	8
16	10-008003-01	27" LCD Lock/Latch Brkt Assy, Right	1	C-23	35		80-002010-06	10-32 x 3/8" HWH Phillips MS, Serrated	4
17	CE 52-000070-10	DI Topper Printed Plastics Assy	1	C-65	36		80-002025-08	1/4-20 x 1/2" HWH Phillips MS, Serrated	4
18	Std 51-005048-00	Flasher Topper Assy	1	C-48	37		80-008108-16	8-32 x 1" TP Torx MS, Black	2
19	51-005045-00	Backbox Mount PCB Assy	1	C-46	38		80-008110-16	10-32 x 1" TP Torx MS, Black	8
20	51-005044-02	Backbox Mount Solid State Drive Assy, 60GB	1	C-43	39		81-005125-20	1/4-20 x 1-1/4" Carriage Bolt, Black	6
21	10-000236-01	Backbox PCBs EMI Shield Lid	1	-	40		82-002006-08	#6 x 1/2"HWH Phillips SMS	6
22	51-005043-00	27" LCD Pivot/Swing Assy	1	C-44	41		82-002008-08	#8 x 1/2" HWH Phillips SMS	20
23	51-005032-10	27" LCD Monitor Assy, Backbox PCBs	1	C-42	42		82-006106-08	#6 x 1/2" PFH SMS, Black	4
24	CE 42-007001-20	Backbox Right Mtg Hinge, DI Purple	1	-	43	CE	82-008108-10	#8 x 5/8" TP T-20 Torx SMS, Black	2
	LE 42-007001-16	Backbox Right Mtg Hinge, DI Blue	1	-	44		85-003816-12	3/8-16 x 3/4" Hinge Bolt, Short Neck, Black	2
	Std 42-007001-00	Backbox Right Mtg Hinge, Black	1	-	45		85-003816-00	3/8-16 x 3/4" x 1/2" SH T-Nut Pivot Bushing, Black	2
25	CE 42-007001-21	Backbox Left Mtg Hinge, DI Purple	1	-	46		91-002025-00	1/4-20 Flange Nut	6
	LE 42-007001-17	Backbox Left Mtg Hinge, DI Blue	1	-	47		92-000110-00	#10 Flat Washer, Black	8
	Std 42-007001-01	Backbox Left Mtg Hinge, Black	1	-	48		10-000206-09	27" LCD Pivot Backbox Face Plate	1
26	CE 30-000114-20	JJP Logo Name Plate, CE	1	-	49		30-000049-08	Nylon Cable Clamp, Open, 1/2"	2
	LE 30-000114-10	JJP Logo Name Plate, LE	1	-	50		30-000049-16	Nylon Cable Clamp, Open, 1"	7
	Std 30-000114-00	JJP Logo Name Plate, Std	1	-	51	LE	30-000093-01	Button Plug, 1", Black	1
27	51-005042-00	Backbox LED Strip Assy, w/Cable	1	-	52	CE	30-000095-00	Round Plug, w/Flange, Black	4



## Above-Playfield Assemblies

Item	Part Number	Assembly Name	Game Function	Drawing
1	52-000060-0X	DI Bottom Arch Assembly	Playfield Bottom Arch	C-62
2	51-000025-00	Kickback Assembly, Left Mount	Kickback	C-21
3	52-000059-00	DI Left Side Playfield Plastic Assembly	Playfield Plastic	C-61
4	13-002006-00	DI Left Ramp Exit Wire Ramp Assembly	Ball Return (to Right Flipper)	C-11
5	13-002005-00	DI Drone Wire Ramp Assembly	Ball Return (to Left Flipper)	C-10
6	51-000081-20	Moving Tgt Sculpture Mtg Brkt Assembly	QED Figure; Moving Target	C-32
7	51-000084-00	3-Ball Lock Assembly	Physical Ball Lock	C-38
8	52-000054-00	DI 3-Ball Lock Ramp Assembly	STATION 3; Ball Lock Wire Ramp	C-58
9	52-000050-X0	DI Left Ramp Assembly	TRAIN 1; Left Ramp	C-54
10	52-000049-00	DI Smartphone Assembly	Smartphone; PF Display	C-52
11	51-000082-10	DI Trap Door Surface Assembly	Bob's Trap Door	C-36
12	52-000048-00	DI Quantum Theater Assembly	Quantum Theater; PF Display	C-50
13	51-000106-949	Pop Bumper Top Assy, White/Yellow/White	Left Pop Bumper	C-18
	11-005004-01	Pop Bumper Ring & Rod Assembly		C-18
14	51-000106-949	Pop Bumper Top Assy, White/Yellow/White	Right Pop Bumper	C-18
	11-005004-01	Pop Bumper Ring & Rod Assembly		C-18
15	51-000106-949	Pop Bumper Top Assy, White/Yellow/White	Lower Pop Bumper	C-18
	11-005004-01	Pop Bumper Ring & Rod Assembly		C-18
16	52-000062-00	DI Mini Playfield Assembly	Mini Playfield	C-64
17	52-000051-00	DI Upper Left Ramp Assembly	Ball Lock Ramp	C-56
18	52-000056-10	DI Robot & Betty Sculpture Assembly	Robot Betty Ball Diverter	C-60
19	52-000047-00	DI Back Panel Assembly	Playfield Backdrop	C-49
20	10-005037-00	DI Orbit Ramp Assy	Left Orbit Shot	-
21	52-000065-00	DI Right Wireform Steel Ramp Assy	Right Wireform Ramp Entry	-
22	10-009002-00	DI Shooter Lane Steel Ramp	Shooter Lane/Playfield Transition	-
23	51-000107-00	Playfield Bubble Level Assy	Playfield Pitch Indicator	-
a)	30-000087-00	Playfield Bubble Level Brkt		
b)	30-000087-01	Playfield Bubble Level Vial		





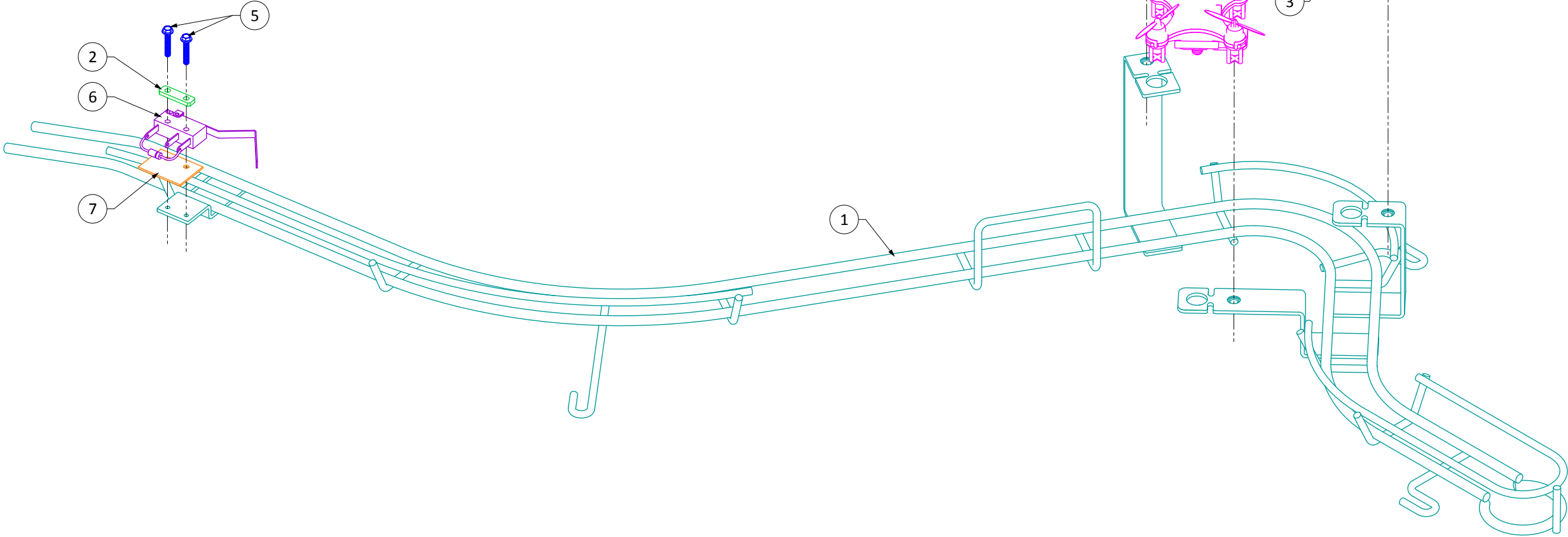


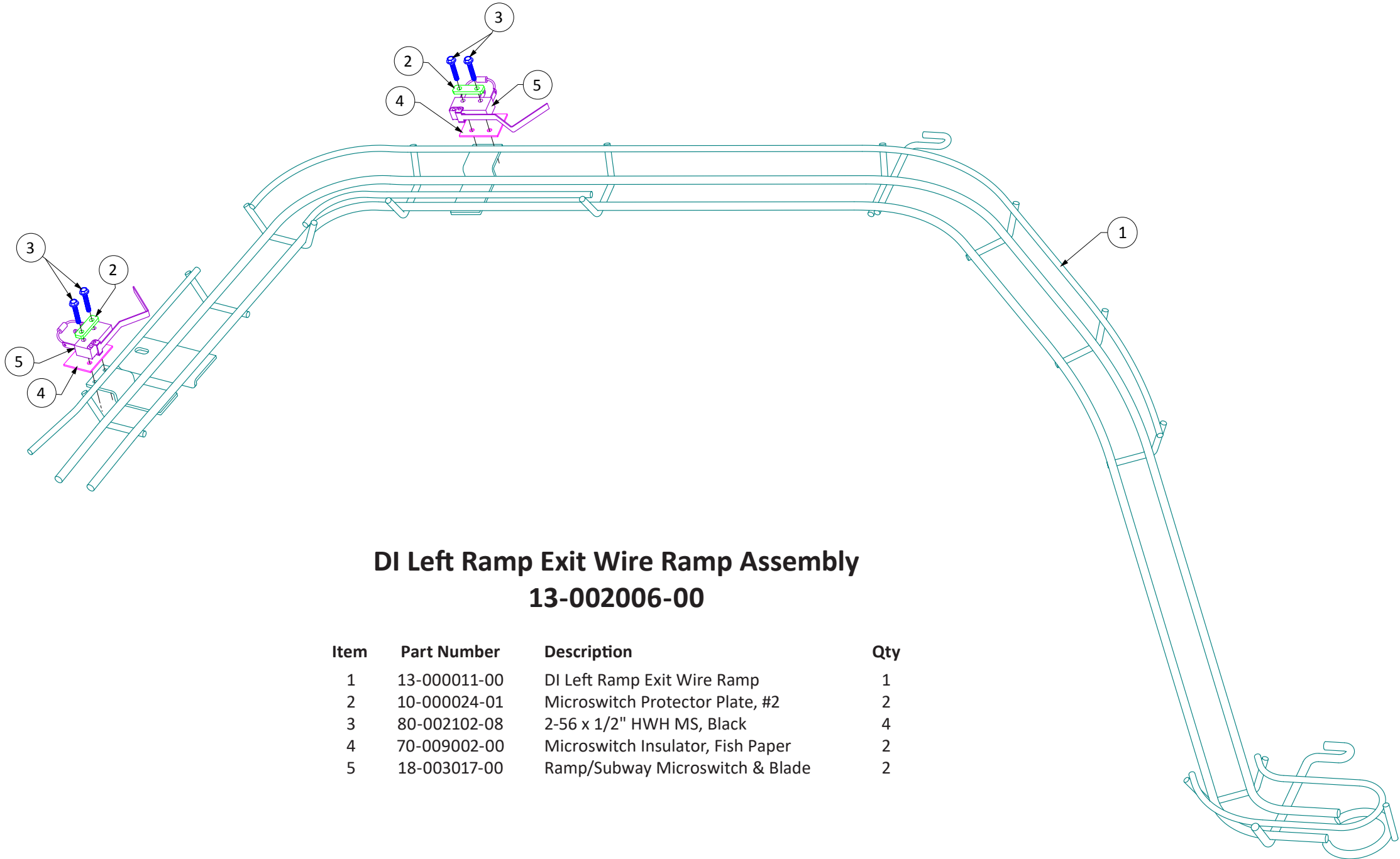
## Under-Playfield Assemblies

Item	Part Number	Assembly Name	Game Function	Drawing
1	52-000132-00	Left Flipper Assembly, FL-15411	Left Flipper	C-14
2	52-000131-14	Right Flipper Assembly, Mod-UL, FL-15411	Right Flipper	C-12
3	51-000021-00	5-Ball Trough Assembly	Ball Trough, VUK	C-20
4	51-000026-00	Auto-Launch Assembly	Ball Auto-Launch	C-22
5	51-000003-00	Slingshot Assembly, 23-800	Left Slingshot	C-16
6	51-000003-00	Slingshot Assembly, 23-800	Right Slingshot	C-16
7	51-000024-01	Playfield Magnet Assembly, Fixed Core	Left Magnet	C-24
8	51-000024-01	Playfield Magnet Assembly, Fixed Core	Right Magnet	C-24
9	51-000024-00	Playfield Magnet Assembly, Adjustable Core	Drone Magnet	C-24
10	51-000024-01	Playfield Magnet Assembly, Fixed Core	Upper Magnet	C-24
11	51-000081-00	Moving Target Assembly	QED Moving Target	C-30
12	51-000083-00	Ball Scoop Assembly, Left Side Entrance	Smartphone Scoop Eject	C-37
13	52-000131-14	Right Flipper Assembly, Mod-UL, FL-15411	Upper Right Flipper	C-12
14	51-000004-01	Pop Bumper Bottom Assembly, 26-1200	Lower Pop Bumper	C-19
15	51-000024-00	Playfield Magnet Assembly, Adjustable Core	Theater Magnet	C-24
16	51-000004-01	Pop Bumper Bottom Assembly, 26-1200	Left Pop Bumper	C-19
17	51-000004-01	Pop Bumper Bottom Assembly, 26-1200	Right Pop Bumper	C-19
18	51-000082-00	Trap Door Underside Assembly	Bob's Trap Door	C-34
19	51-000086-00	Inline Kicker Assembly	Skill Shot Kicker	C-39
20	52-000056-00	DI Robot Assembly	Betty Diverter	C-59
21	31-000006-00	DI Plastic Ball Scoop Subway	Subway to Smartphone Scoop	-
22	31-000007-00	DI Plastic Trap Door Subway	Subway from Bob's Trap Door	-

DI Drone Wire Ramp Assembly  
13-002005-00

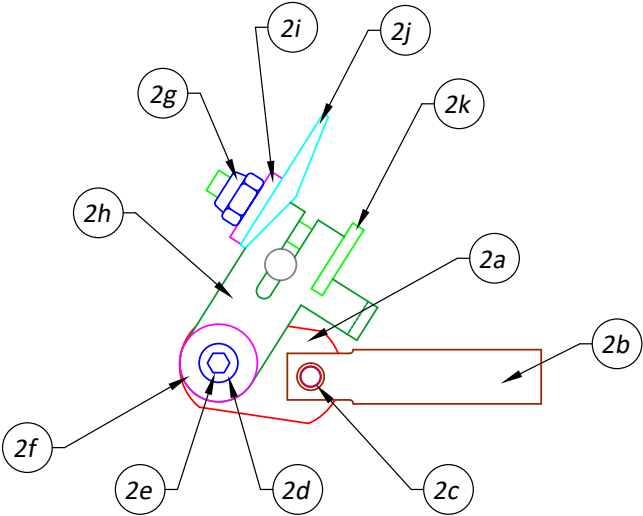
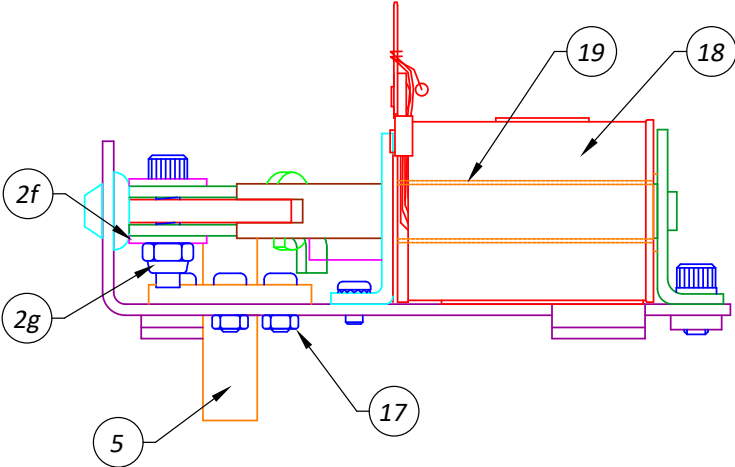
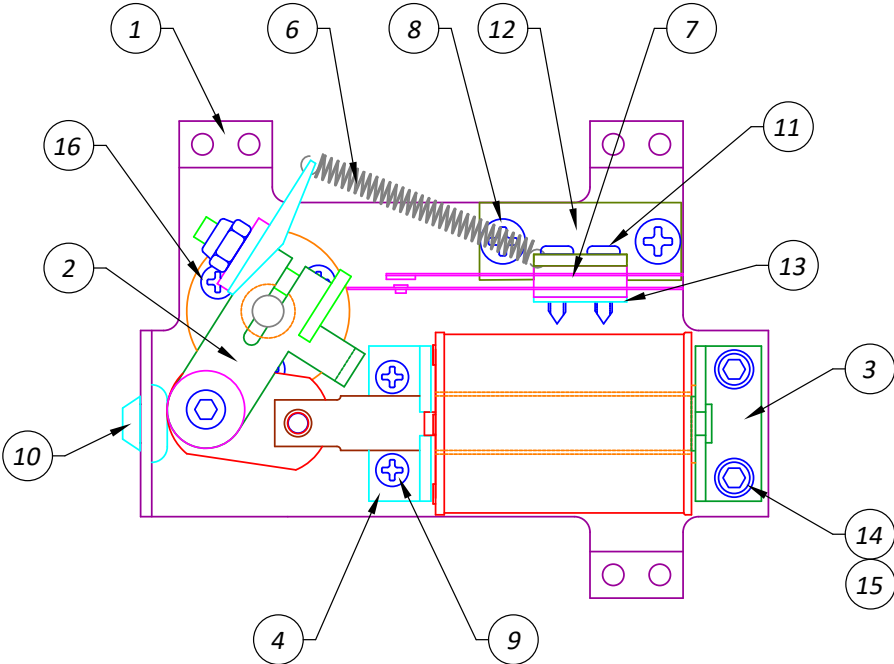
Item	Part Number	Description	Qty
1	13-000013-00	DI Drone Wire Ramp	1
2	10-000024-01	Microswitch Protector Plate, #2	1
3	52-000057-00	DI Quadcopter Drone Assy	3
4	80-001008-06	8-32 x 3/8" PPH MS, SEMS	3
5	80-002102-08	2-56 x 1/2" HWH MS, Black	2
6	18-003017-00	Ramp/Subway Microswitch & Blade	1
7	70-009002-00	Microswitch Insulator, Fish Paper	1





**DI Left Ramp Exit Wire Ramp Assembly**  
**13-002006-00**

Item	Part Number	Description	Qty
1	13-000011-00	DI Left Ramp Exit Wire Ramp	1
2	10-000024-01	Microswitch Protector Plate, #2	2
3	80-002102-08	2-56 x 1/2" HWH MS, Black	4
4	70-009002-00	Microswitch Insulator, Fish Paper	2
5	18-003017-00	Ramp/Subway Microswitch & Blade	2





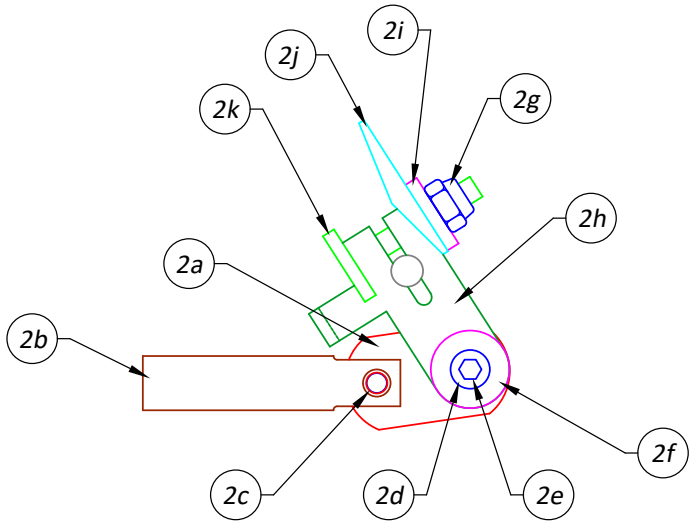
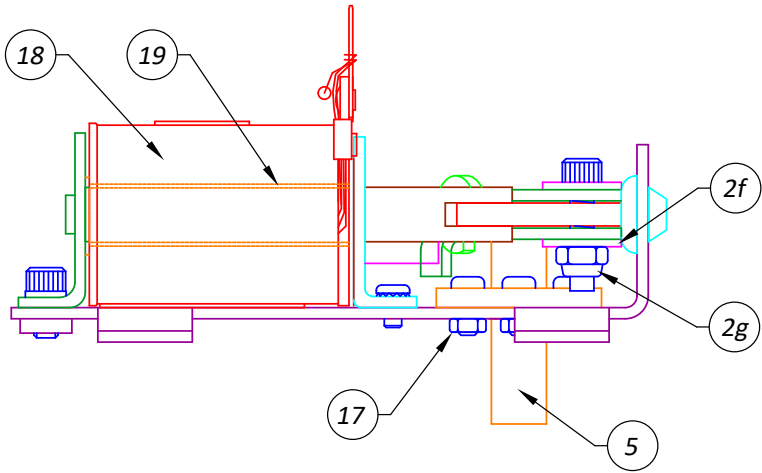
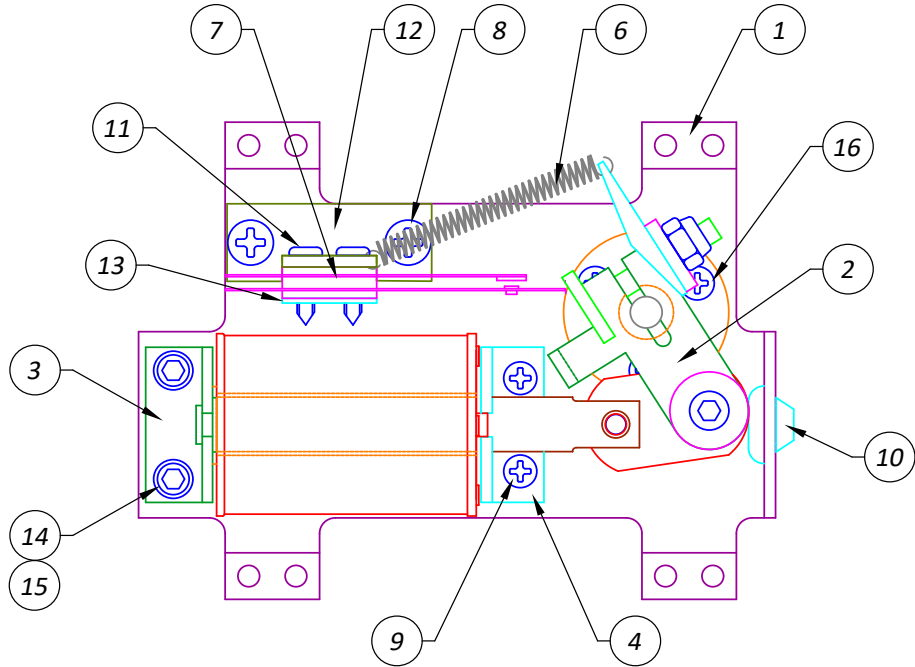
## Right Flipper Assembly, Mod-UL 51-000001-14

Item	Part Number	Description	Qty
1	10-005001-14	Flipper Base Plate, Right, Mod-UL	1
2	51-005018-00	Flipper Crank & Link Assy, Right	1
abc)	11-005000-00	Flipper Coil Plunger & Link Assy	1
a)	30-009003-00	Flipper Link	1
b)	11-000003-00	Flipper Plunger	1
c)	94-004002-00	5/32" x 7/16" Roll Pin	1
d)	94-003001-00	Flipper Crank & Link Bushing	1
e)	90-004010-14	10-32 x 7/8" SH CS	1
f)	92-000010-00	#10 Flat Washer, 0.226" ID, 0.5" OD, 0.05" TH	2
g)	91-000010-00	10-32 Nylon Stop Nut	2
h)	10-000019-00	Flipper Crank, Right	1
i)	92-000010-02	#10 Flat Washer, 0.207" ID, 0.625" OD, 0.0975" TH	1
j)	10-000020-00	Flipper Return Spring Brkt	1
k)	90-000001-00	Locking Stud Bolt	1
3	10-007001-00	Flipper Coil Stop Brkt	1
4	10-007002-01	Flipper Coil Centering Brkt, 1-Way	1
5	30-009002-00	Flipper Bushing	1

Item	Part Number	Description	Qty
6	13-007001-00	Flipper Return Spring	1
7	18-000001-00	End Of Stroke Leaf Switch	1
8	80-000008-05	8-32 x 5/16" PPH MS	2
9	80-001006-04	6-32 x 1/4" PPH MS, SEMS	2
10	25-009001-00	Rubber Bumper Plug, Black	1
11	82-000006-08	#6 x 1/2" PPH SMS	2
12	10-000018-00	End Of Stroke Switch Brkt	1
13	91-006000-00	Tinnerman Nut, Leaf Switch Stack	1
14	90-004010-06	10-32 x 3/8" SH CS	2
15	92-001010-00	#10 Split Lock Washer	2
16	80-000006-06	6-32 x 3/8" PPH MS	3
17	91-000006-00	6-32 Nylon Stop Nut	3

***for 52-000131-14, Right Flipper Assy, Mod-UL, FL-15411, add:***

18	23-002003-00	FL-15411 Flipper Coil	1
19	30-000014-35	2-3/16" Coil Tubing, Straight	1



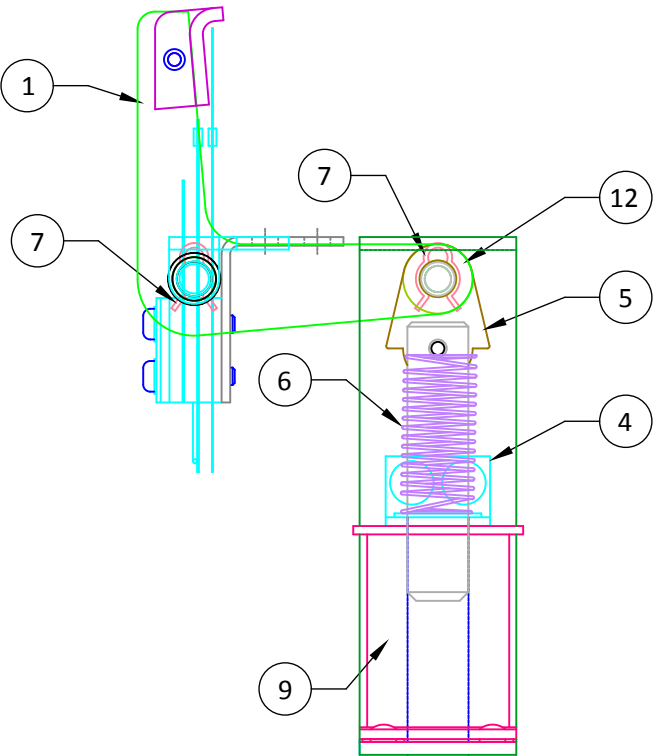
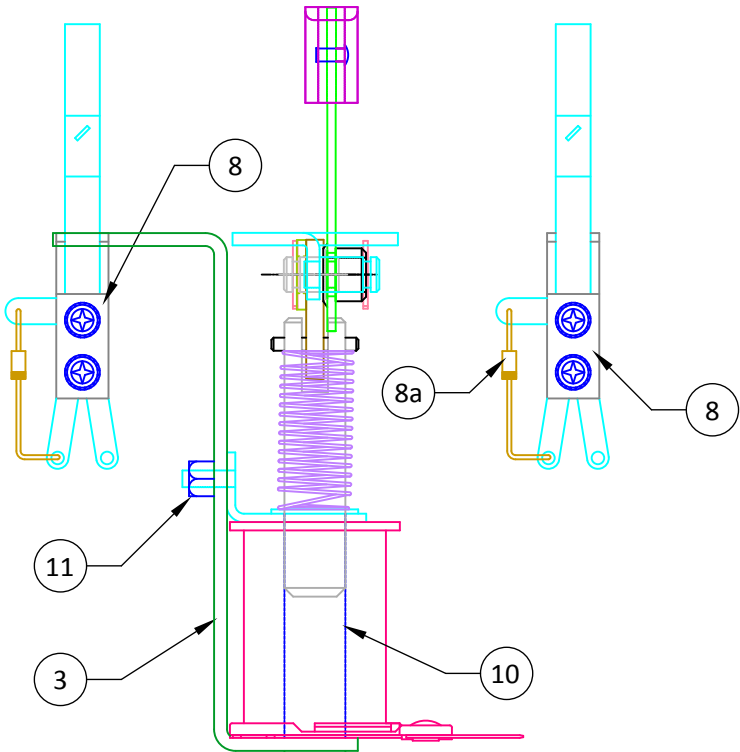
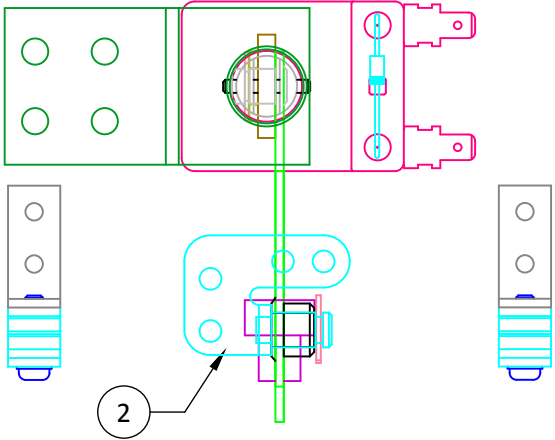
# Left Flipper Assembly 51-000002-00

Item	Part Number	Description	Qty
1	10-005002-00	Flipper Base Plate, Left	1
2	51-005018-01	Flipper Crank & Link Assy, Left	1
abc)	11-005000-00	Flipper Coil Plunger & Link Assy	1
a)	30-009003-00	Flipper Link	1
b)	11-000003-00	Flipper Plunger	1
c)	94-004002-00	5/32" x 7/16" Roll Pin	1
d)	94-003001-00	Flipper Crank & Link Bushing (inside)	1
e)	90-004010-14	10-32 x 7/8" SH CS	1
f)	92-000010-00	#10 Flat Washer, 0.226" ID, 0.5" OD, 0.05" TH	2
g)	91-000010-00	10-32 Nylon Stop Nut	2
h)	10-000019-01	Flipper Crank, Left	1
i)	92-000010-02	#10 Flat Washer, 0.207" ID, 0.625" OD, 0.0975" TH	1
j)	10-000020-00	Flipper Return Spring Brkt	1
k)	90-000001-00	Locking Stud Bolt, Flipper Crank	1
3	10-007001-00	Flipper Coil Stop Brkt	1
4	10-007002-01	Flipper Coil Centering Brkt, 1-Way	1
5	30-009002-00	Flipper Bushing	1

Item	Part Number	Description	Qty
6	13-007001-00	Flipper Return Spring	1
7	18-000001-00	End Of Stroke Leaf Switch	1
8	80-000008-05	8-32 x 5/16" PPH MS	2
9	80-001006-04	6-32 x 1/4" PPH MS	2
10	25-009001-00	Rubber Bumper Plug, Black	1
11	82-000006-08	#6 x 1/2" PPH SMS	2
12	10-000018-00	End Of Stroke Switch Brkt	1
13	91-006000-00	Tinnerman Nut, Leaf Switch Stack	1
14	90-004010-06	10-32 x 3/8" SH CS	2
15	92-001010-00	#10 Split Lock Washer	2
16	80-000006-06	6-32 x3/8" PPH MS	3
17	91-000006-00	6-32 Nylon Stop Nut	3

**for 52-000132-00, Left Flipper Assy, FL-15411, add:**

18	23-002003-00	FL-15411 Flipper Coil	1
19	30-000014-35	2-3/16" Coil Tubing, Straight	1





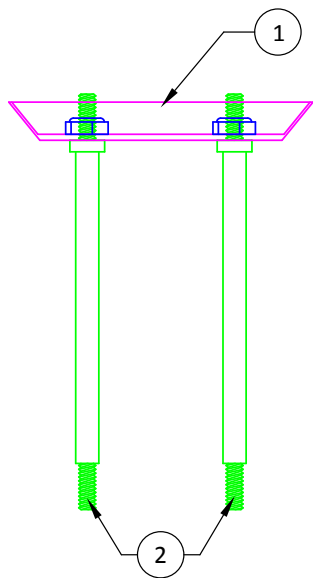
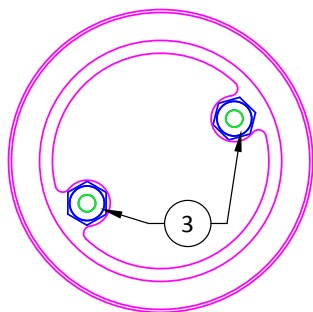
## Slingshot Assembly, 23-800

### 51-000003-00

Item	Part Number	Description	Qty
1	10-000042-00	Slingshot Kicker Crank Assy	1
2	10-000043-00	Slingshot Kicker Crank Mtg Brkt	1
3	10-005004-00	Slingshot Coil Brkt	1
4	10-007000-01	Coil Centering Brkt, 5/8", 3/8" Mnts, 6-32 Studs	1
5	11-005003-00	Slingshot Plunger & Link Assy, 2"	1
6	13-007004-00	Slingshot Plunger Return Spring	1
7	13-009002-00	Hairpin Clip	2
8	18-007008-00	Upright Leaf Switch Assy, Front Mount	2
a)	110-000002-0T	Diode, 1N4004, 400V, 1A	2
9	23-000003-00	23-800 Standard Coil	1
10	30-000014-28	1-3/4" Coil Tubing, Straight	1
11	91-000006-00	6-32 Nylon Stop Nut	2
12	95-002651-20-67	Flat Washer, 0.265" ID, 0.5" OD, 0.067" TH	1

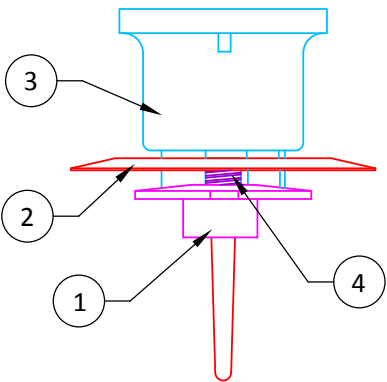
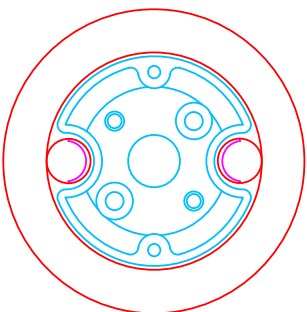
Pop Bumper Ring & Rod Assembly  
11-005004-01

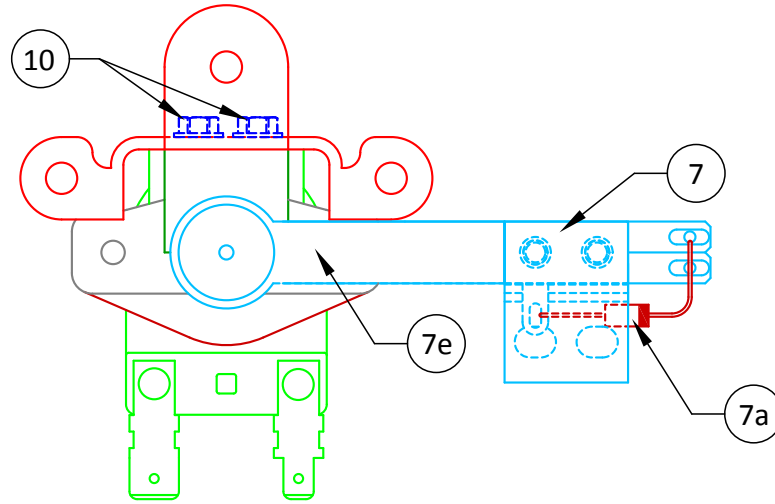
Item	Part Number	Description	Qty
1	11-000005-00	Pop Bumper Ring	1
2	11-000008-00	Pop Bumper Rod	2
3	91-000006-00	6-32 Nylon Stop Nut	2



Pop Bumper Top Assembly, White/Yellow/White  
51-000106-949

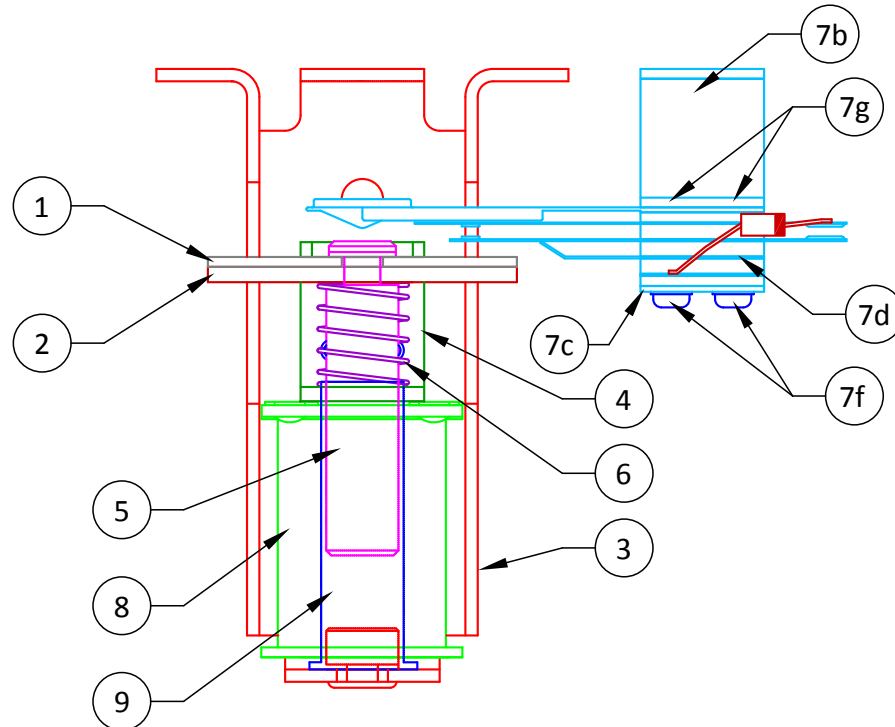
Item	Part Number	Description	Qty
1	30-000003-09	Pop Bumper Base, White	1
2	30-000004-04	Pop Bumper Skirt, Yellow	1
3	30-000005-09	Pop Bumper Body, White	1
4	13-007003-00	Pop Bumper Skirt Spring	1

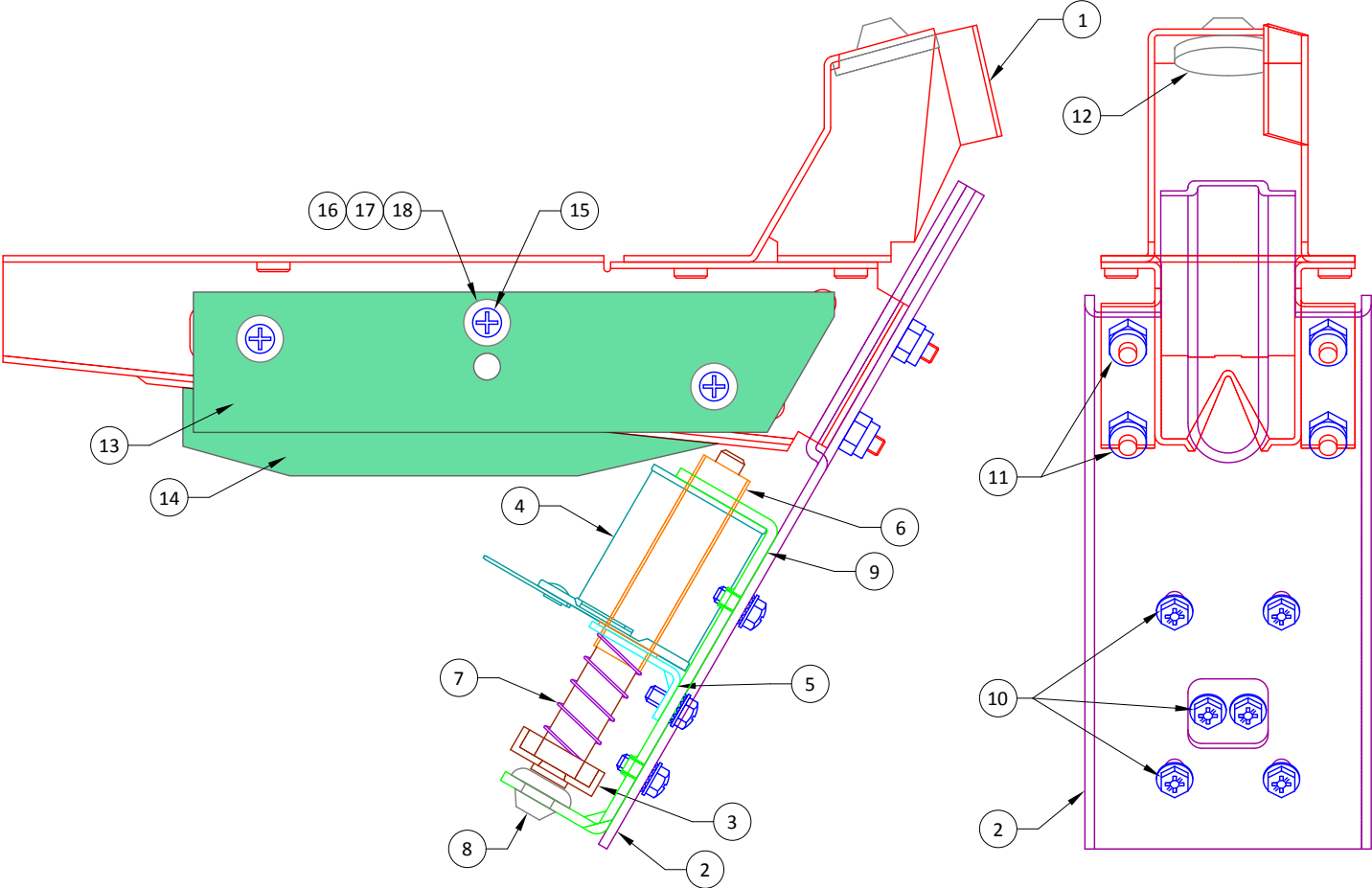




## Pop Bumper Bottom Assembly, 26-1200 51-000004-01

Item	Part Number	Description	Qty
1	10-000021-00	Pop Bumper Yoke, Steel	1
2	10-000021-01	Pop Bumper Yoke, Bakelite	1
3	10-005003-00	Pop Bumper Coil Brkt	1
4	10-007003-00	Pop Bumper Coil Centering Brkt	1
5	11-000004-00	Pop Bumper Coil Plunger	1
6	13-007002-00	Pop Bumper Plunger Return Spring	1
7	18-007007-00	Pop Bumper Leaf Switch Assy	1
a)	110-000002-0T	Diode, 1N4004, 400V, 1A	1
b)	10-000022-00	Pop Bumper Switch Brkt	1
c)	10-000022-01	Curved Switch Plate	1
d)	18-000002-00	Pop Bumper Leaf Switch	1
e)	30-000002-00	Pop Bumper Switch Spoon	1
f)	80-000005-12	5-40 x 3/4" PPH MS	2
g)	91-002005-00	5-40 Hex Nut	2
8	23-000010-00	26-1200 Standard Coil	1
9	30-000014-28	1-3/4" Coil Tubing, Straight	1
10	80-002006-04	6-32 x 1/4" HWH Phillips MS, Serrated	2

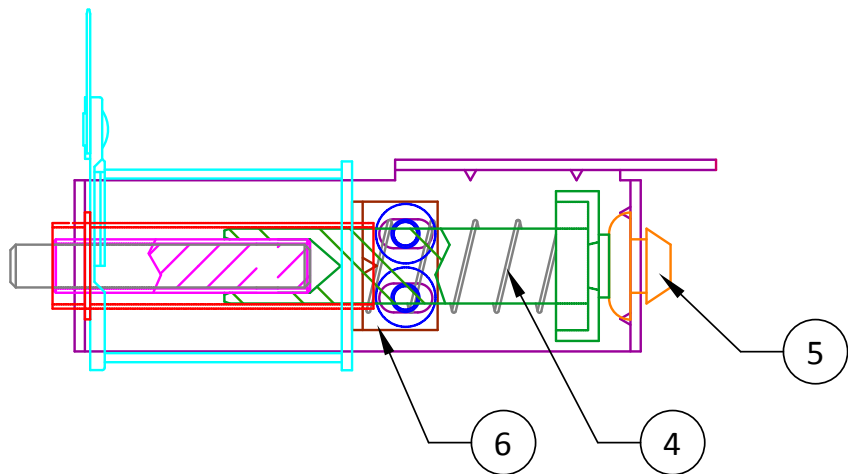




5-Ball Trough Assembly  
51-000021-00

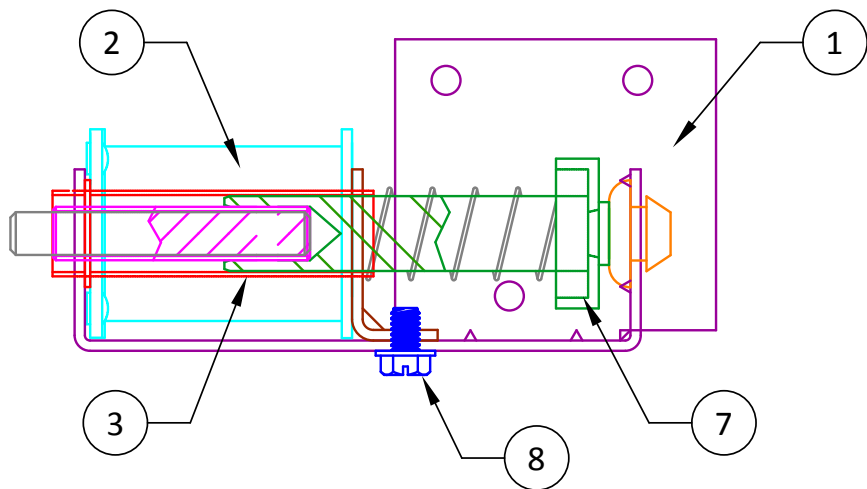
Item	Part Number	Description	Qty
1	10-005010-00	Ball Trough Main Brkt	1
2	10-005010-01	Ball Trough Coil Brkt	1
3	11-005001-00	VUK Armature Plunger Assy	1
4	23-000010-00	26-1200 Standard Coil	1
5	10-007000-00	Coil Centering Brkt, 5/8", 3/8" Mnts, 8-32 Tapped	1
6	30-000014-30-1	1-7/8" Coil Tubing, Flanged	1
7	13-007005-00	VUK Plunger Return Spring	1
8	25-009001-00	Rubber Bumper Plug, Black	1
9	10-007006-00	Ball Trough Coil Mtg Brkt	1
10	80-002008-04	8-32 x 1/4" HWH Phillips MS, Serrated	6
11	91-000008-00	8-32 Nylon Stop Nut	4
12	25-009001-01	Ball Trough Bumper Plug, Blue	1
13	15-000004-01	5-Ball Trough Opto Transmitter Bd	1
14	15-000004-00	5-Ball Trough Opto Receiver Bd	1
15	80-002006-10	6-32 x 5/8" HWH Phillips MS, Serrated	6
16	25-009006-00	Rubber Grommet, Ball Trough PCB Mtg	6
17	92-000006-00	#6 Flat Washer, 0.141" ID, 0.437" OD	6
18	94-003002-00	Ball Trough PCB Metal Bushing	6

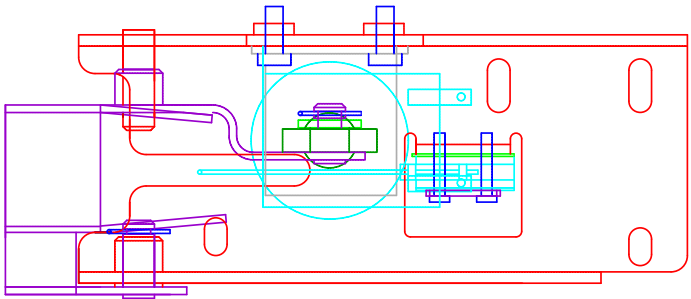




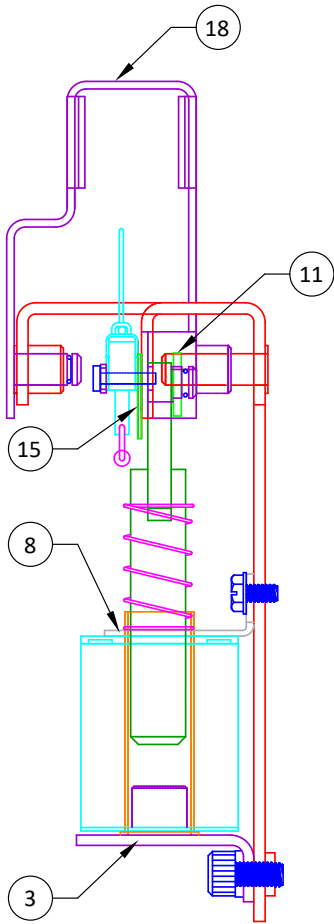
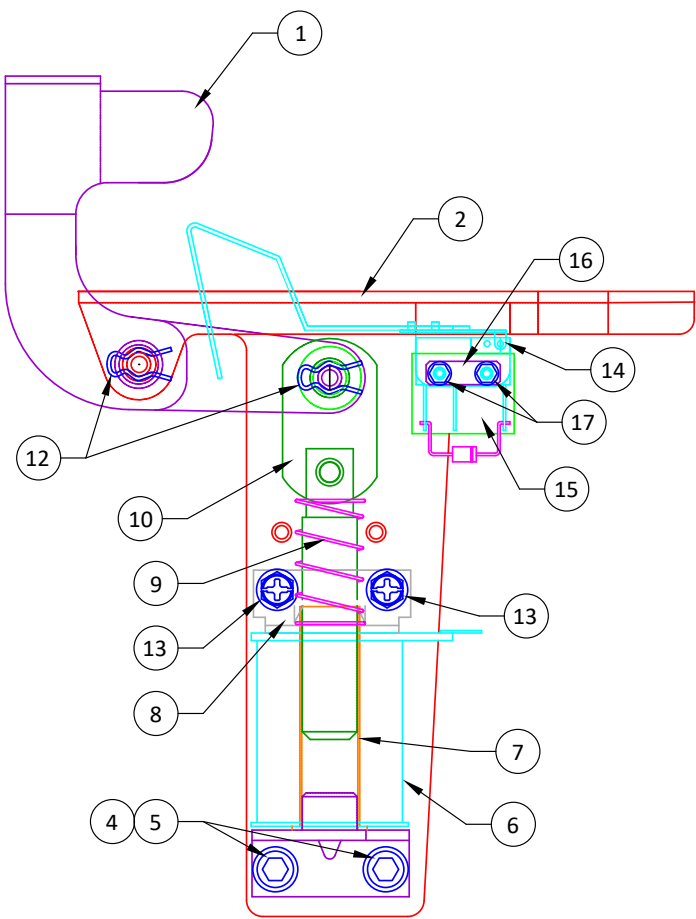
### Kickback Assembly, Left Mount 51-000025-00

Item	Part Number	Description	Qty
1	10-005007-00	Kickback/Knocker Coil Brkt, Left Mount	1
2	23-000003-00	23-800 Standard Coil	1
3	30-000014-30-1	1-7/8" Coil Tubing, Flanged	1
4	13-007005-00	VUK Plunger Return Spring	1
5	25-009001-00	Rubber Bumper Plug, Black	1
6	10-007000-00	Coil Centering Brkt, 5/8", 3/8" Mnts, 8-32 Tapped	1
7	11-005012-00	Kickback Plunger Assy	1
8	80-002008-04	8-32 x 1/4" HWH Phillips MS, Serrated	2

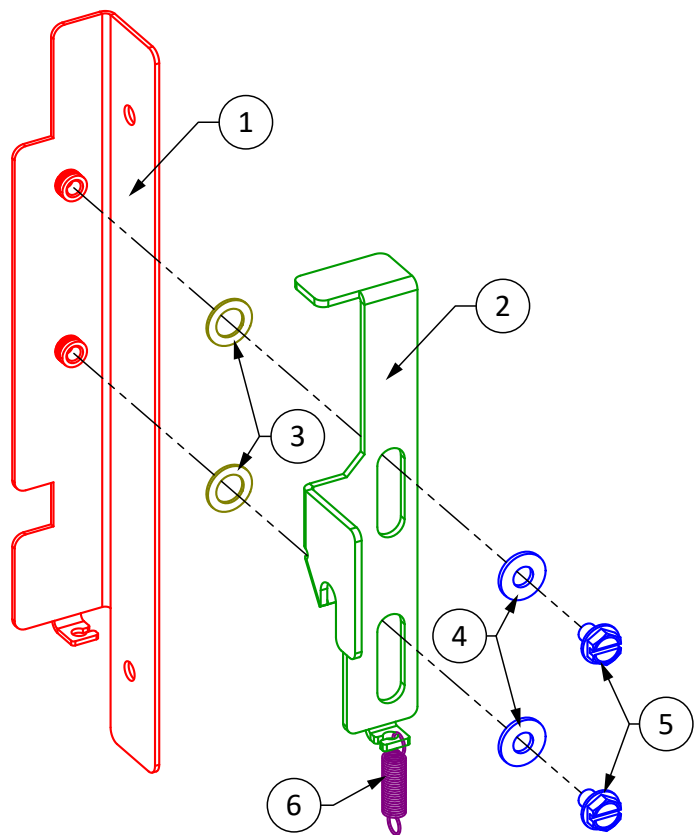




Auto-Launch Assembly  
51-000026-00

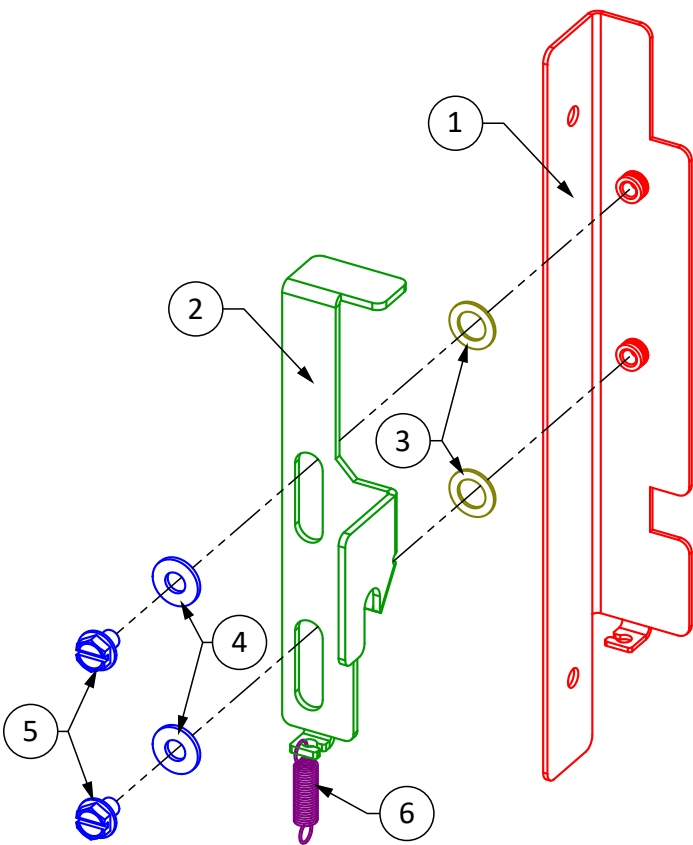


Item	Part Number	Description	Qty
1	10-000028-00	Auto-Launch Crank Brkt	1
2	10-005009-00	Auto-Launch Coil Brkt	1
3	10-007005-00	Auto-Launch Coil Stop Brkt	1
4	90-004010-06	10-32 x 3/8" SH CS, Black	2
5	92-001010-00	#10 Split Lock Washer	2
6	23-000003-00	23-800 Standard Coil	1
7	30-000014-28	1-3/4" Coil Tubing, Straight	1
8	10-007009-00	Coil Centering Brkt, 3/4"	1
9	13-007004-00	Slingshot Plunger Return Spring	1
10	11-005000-00	Flipper Coil Plunger & Link Assy	1
11	95-002651-20-67	Flat Washer, 0.265" ID, 0.5" OD, 0.067" TH	1
12	13-009002-00	Hairpin Clip	2
13	80-002006-04	6-32 x 1/4" HWH Phillips, Serrated	2
14	18-003001-00	Auto-Launch Microswitch & Wireform	1
15	70-009002-00	Microswitch Insulator, Fish Paper	1
16	10-000024-01	Microswitch Protector Plate, #2	1
17	80-002102-08	2-56 x 1/2" HWH MS, Black	2
18	62-000002-00	Auto-Launch Crank Decal	1



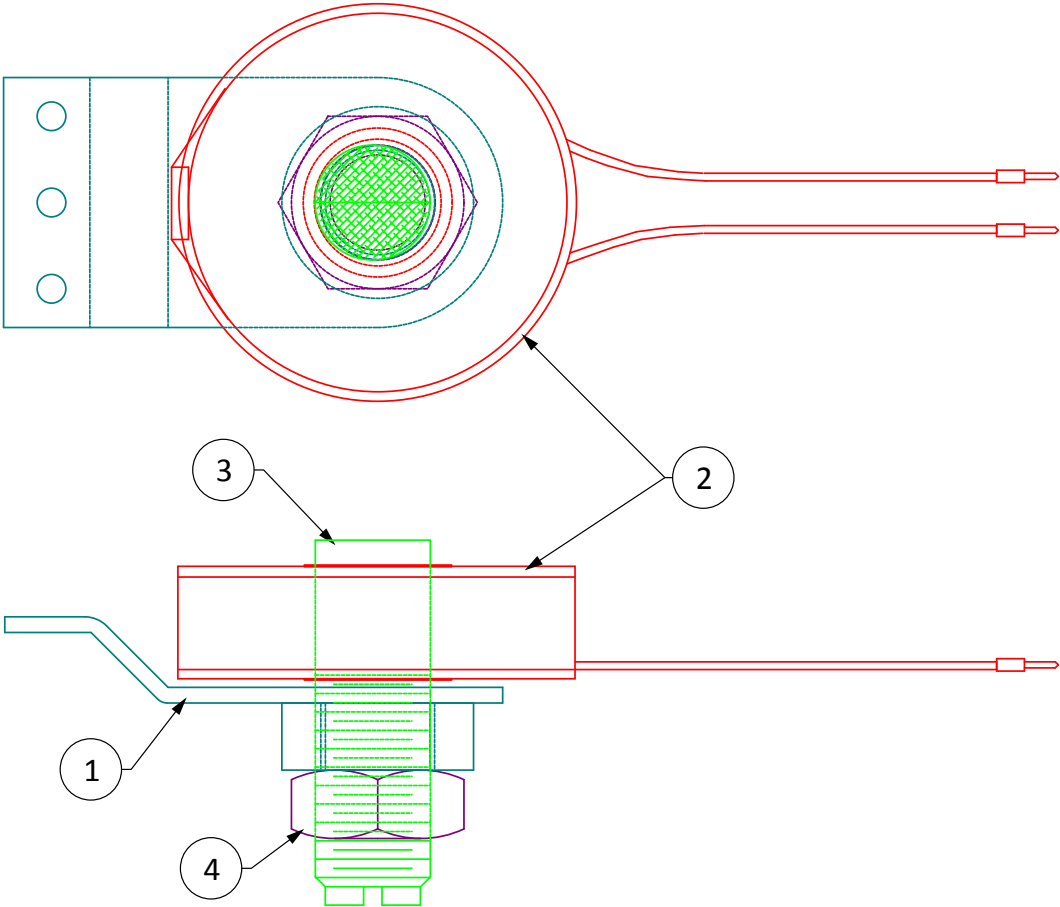
**27" LCD Lock/Latch Brkt Assembly, Left**  
**10-008003-00**

Item	Part Number	Description	Qty
1	10-000203-00	27" LCD Lock Mtg Brkt, Left	1
2	10-000202-00	27" LCD Lock Brkt, Left	1
3	92-000625-00	Nylon Washer, 0.312" ID, 0.5" OD, 0.031" TH	2
4	92-000010-00	#10 Flat Washer, 0.226" ID, 0.507" OD	2
5	80-002010-04	10-32 x 1/4" HWH Phillips MS, Serrated	2
6	13-007013-00	Single Door Extension Spring	1



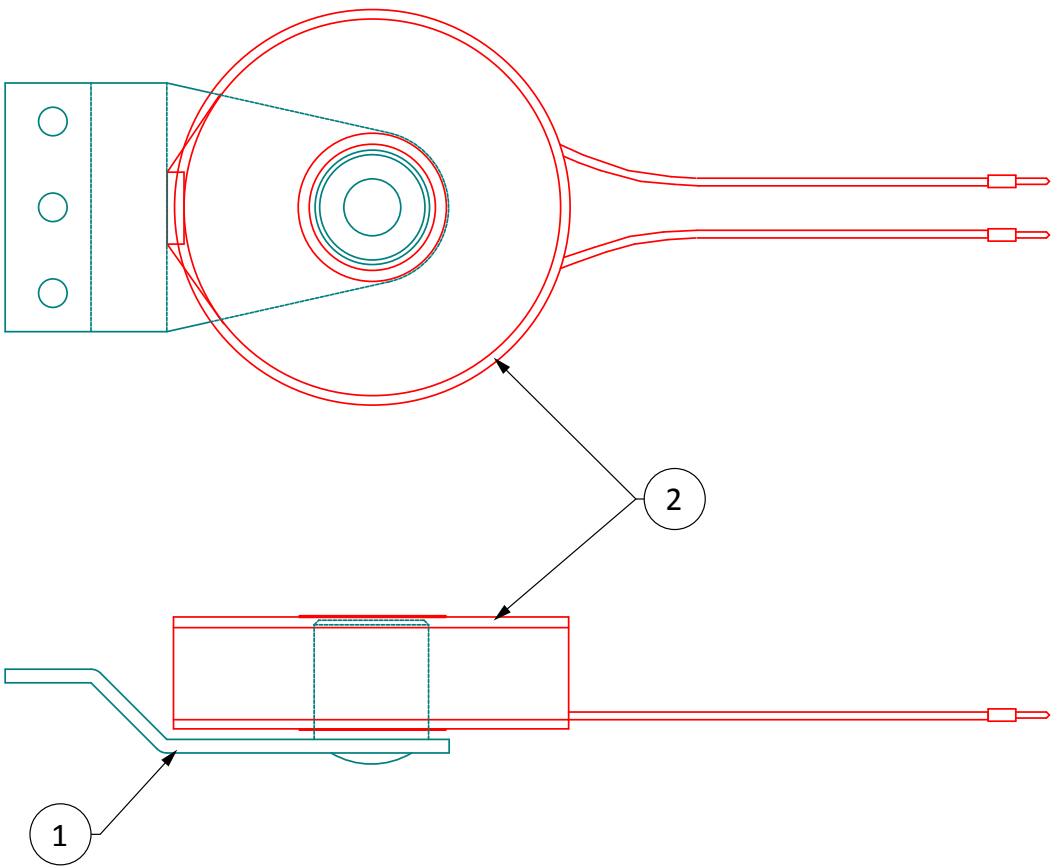
**27" LCD Lock/Latch Brkt Assembly, Right**  
**10-008003-01**

Item	Part Number	Description	Qty
1	10-000203-01	27" LCD Lock Mtg Brkt, Right	1
2	10-000202-01	27" LCD Lock Brkt, Right	1
3	92-000625-00	Nylon Washer, 0.312" ID, 0.5" OD, 0.031" TH	2
4	92-000010-00	#10 Flat Washer, 0.226" ID, 0.507" OD	2
5	80-002010-04	10-32 x 1/4" HWH Phillips MS, Serrated	2
6	13-007013-00	Single Door Extension Spring	1



**Playfield Magnet Assembly, Adjustable Core**  
**51-000024-00**

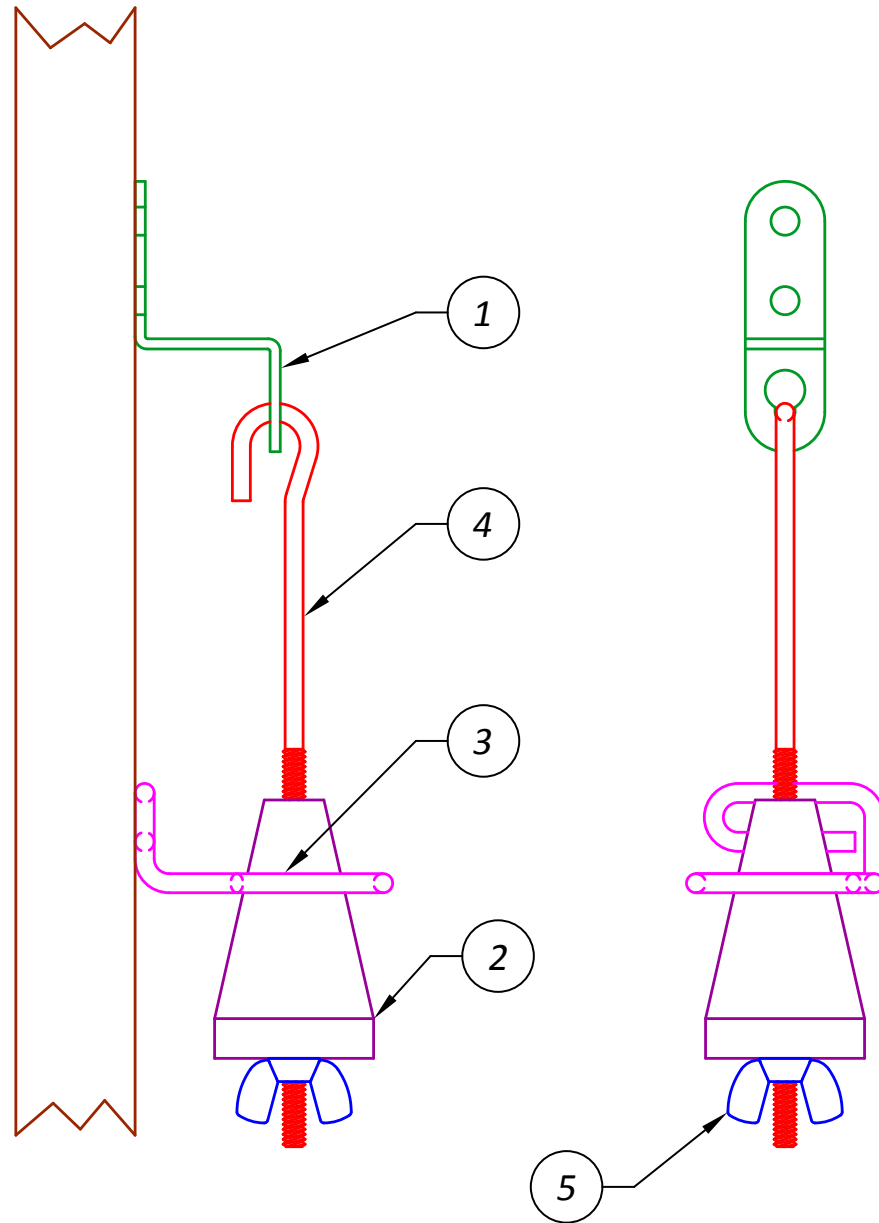
Item	Part Number	Description	Qty
1	10-005008-00	Playfield Magnet Brkt, Adjustable Core	1
2	23-004005-00	22-675 Lg Magnet Coil	1
3	11-000012-00	Magnet Pole Shaft	1
4	91-002034-00	3/4-16 Hex Jam Nut	1



**Playfield Magnet Assembly, Fixed Core**  
**51-000024-01**

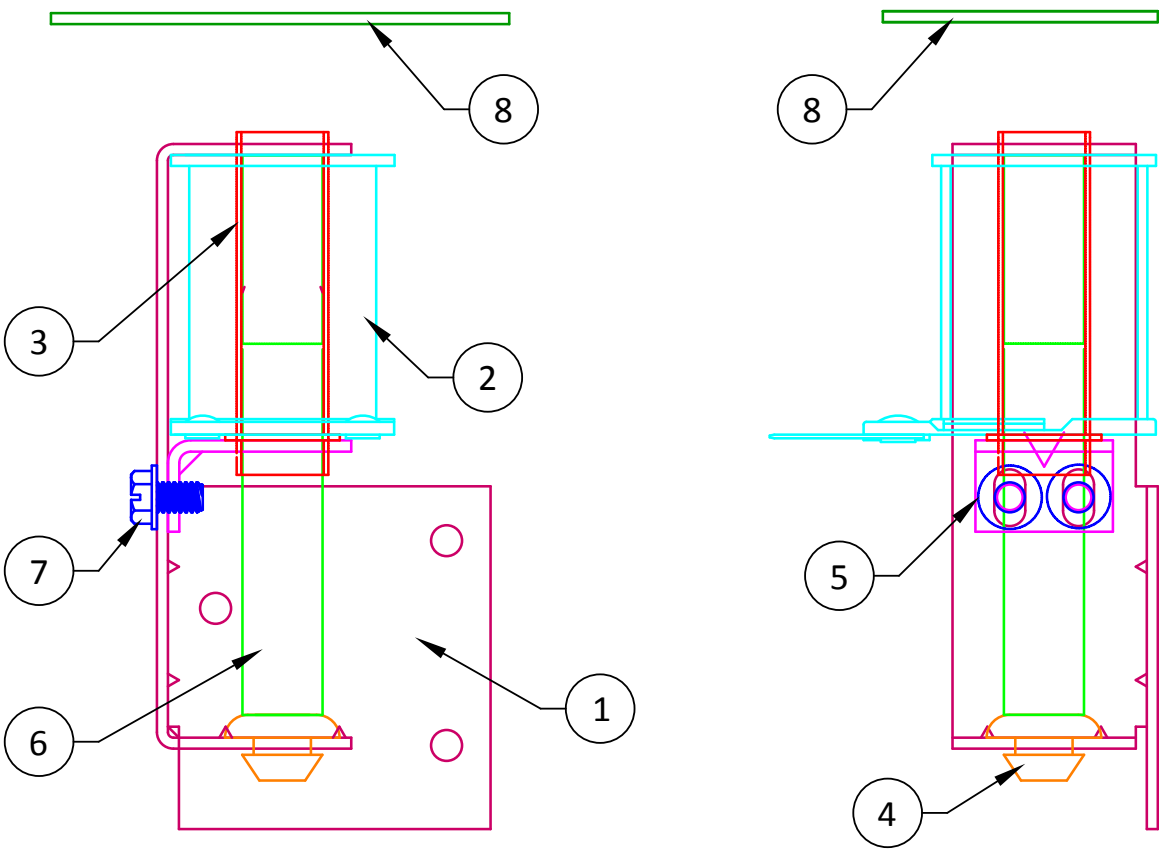
Item	Part Number	Description	Qty
1	10-005008-01	Playfield Magnet Brkt, Fixed Core	1
2	23-004005-00	22-675 Lg Magnet Coil	1





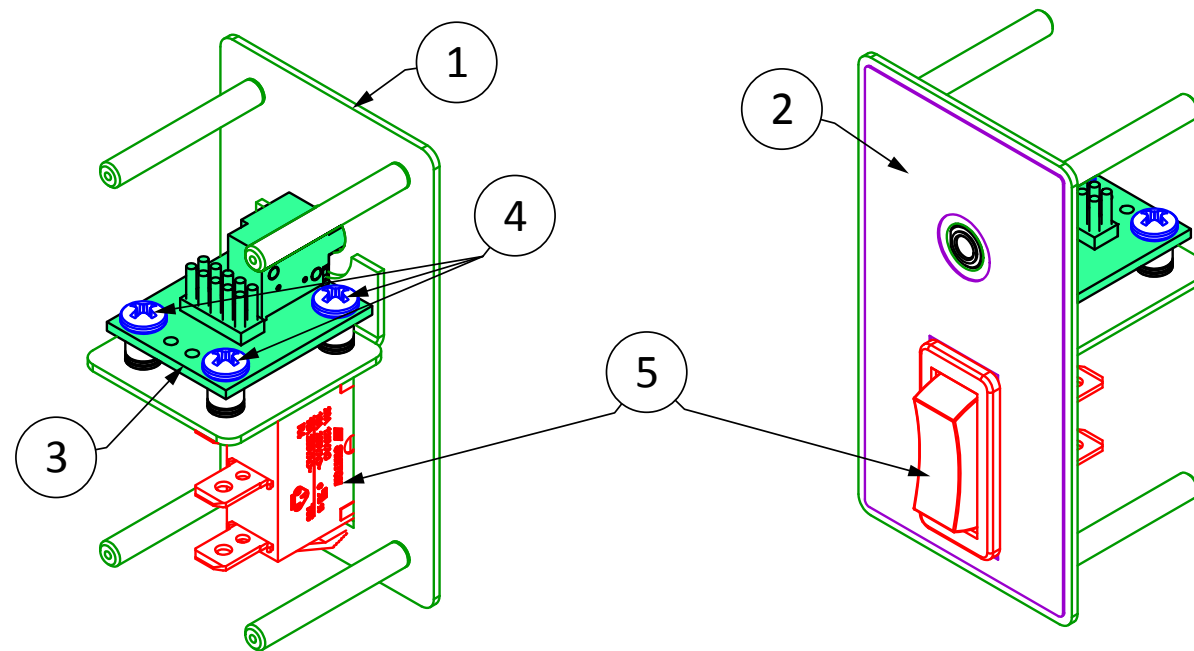
## Plumb Bob Tilt Assembly 51-000028-00

Item	Part Number	Description	Qty
1	10-000086-00	Tilt Hanger Wire Brkt	1
2	11-000028-00	Plumb Bob Weight	1
3	13-003008-00	Tilt Contact Wire Form Brkt	1
4	13-003009-00	Tilt Hanger Wire	1
5	91-003406-00	6-32 Wing Nut, Nylon	1



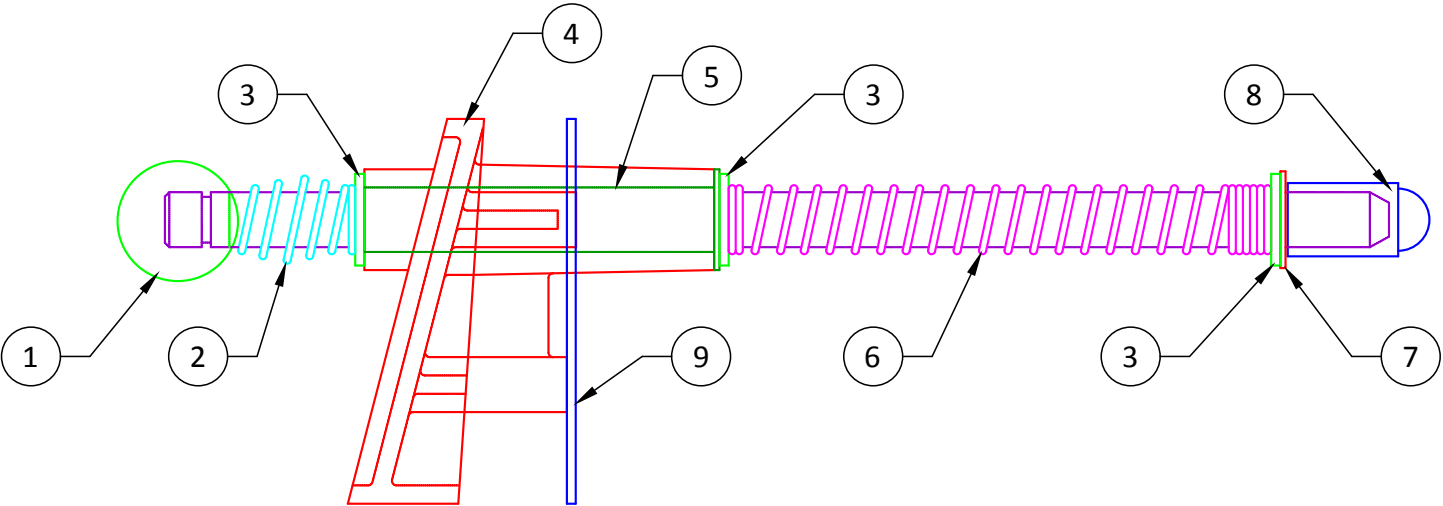
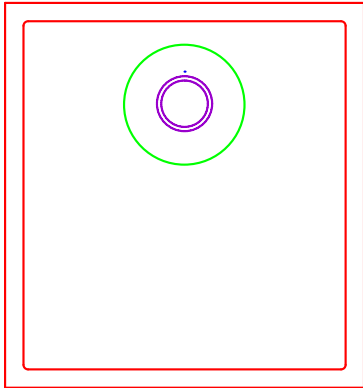
**Knocker Assembly, Vertical**  
**51-000032-01**

Item	Part Number	Description	Qty
1	10-005007-00	Kickback/Knocker Coil Brkt, Left Mount	1
2	23-000003-00	23-800 Standard Coil	1
3	30-000014-30-1	1-7/8" Coil Tubing, Flanged	1
4	25-009001-00	Rubber Bumper Plug, Black	1
5	10-007000-00	Coil Centering Brkt, 5/8", 3/8" Mnts, 8-32 Tapped	1
6	11-000011-00	Knocker Plunger Assy	1
7	80-002008-04	8-32 x 1/4" HWH Phillips MS, Serrated	2
8	10-000016-00	Knocker Strike Plate	1



## Cabinet Headphone Jack Assembly 51-000064-00

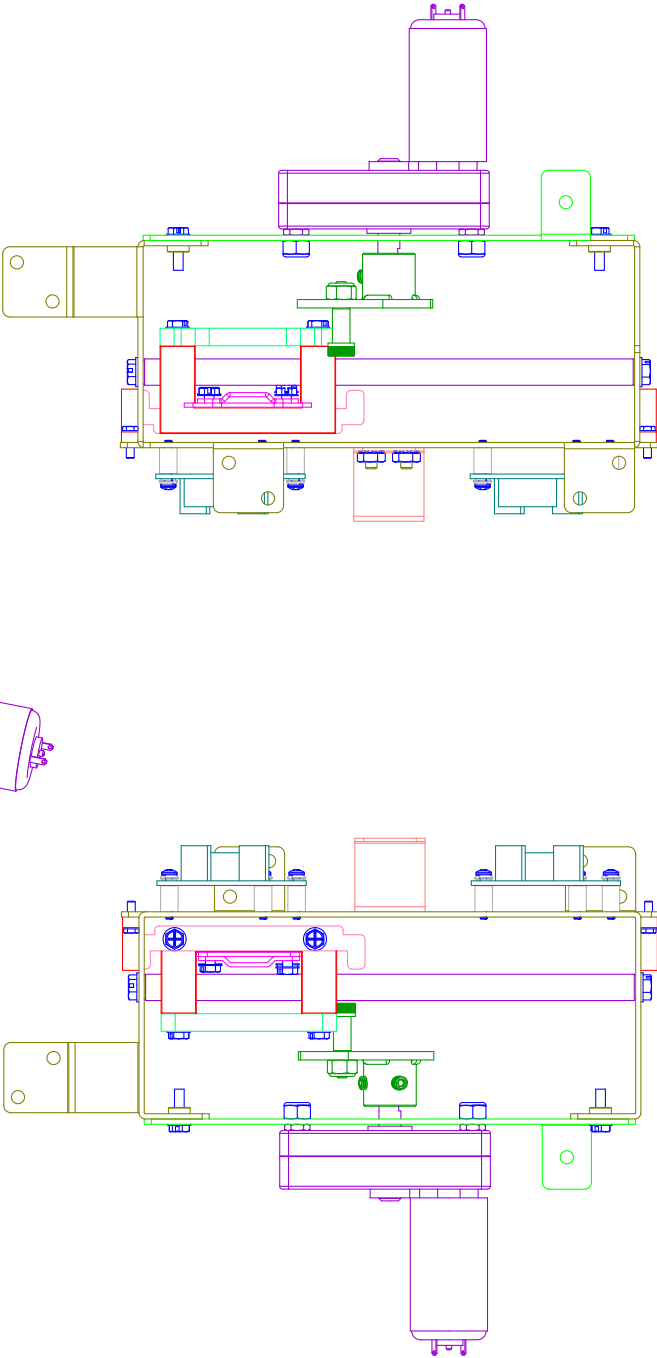
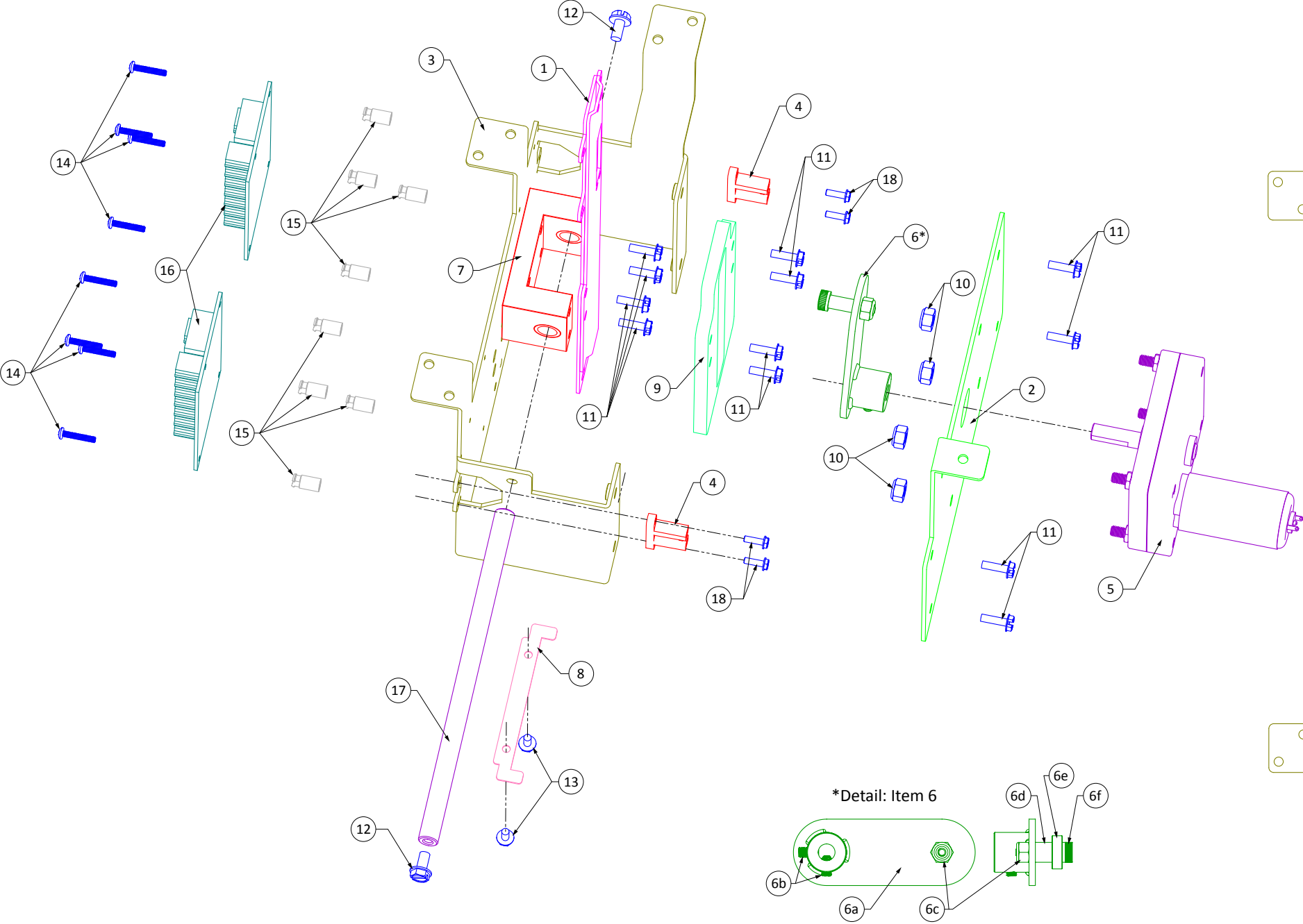
Item	Part Number	Description	Qty
1	10-000197-00	Cabinet Headphone Mtg Plate	1
2	62-000030-02	Cabinet Headphone Jack Decal	1
3	15-000052-00	Cabinet Headphone Bd	1
4	80-000006-04	6-32 x 1/4" PPH MS	4
5	18-003006-01	Volume Control Switch, Rocker Style, SPDT, 15A	1





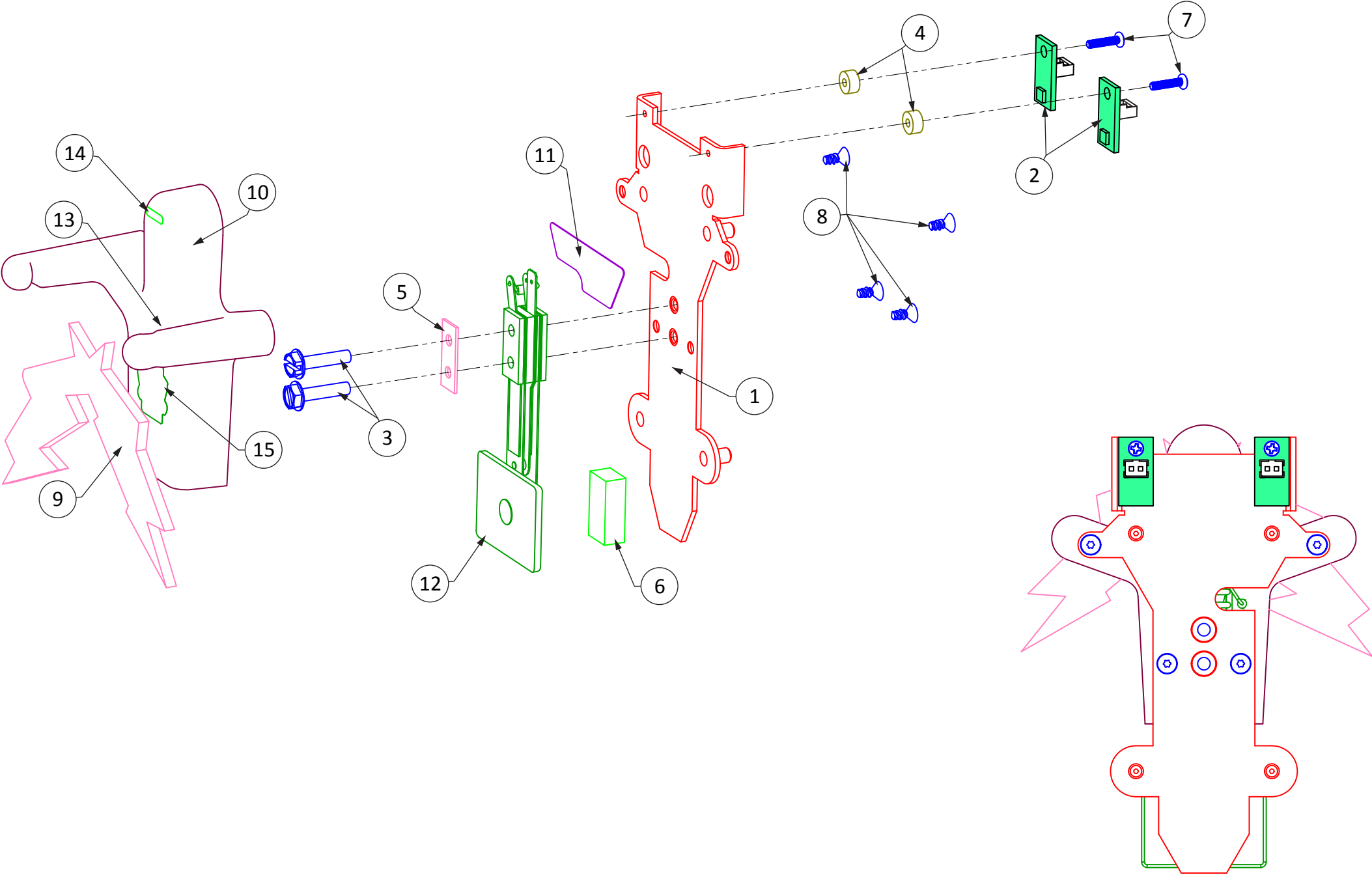
# **DI Ball Shooter Assemblies** **51-000087-00 (Std), -01 (LE), -02 (CE)**

Item	Part Number	Description	Qty
1	11-000007-00	Ball Shooter Rod, Black Ball	1
2	13-007006-00	Ball Shooter Outer Spring	1
3	95-002564-58-16	Flat Washer, 25/64" x 5/8" x 16ga	3
4 CE	14-000001-17	Ball Shooter Housing, DI Purple (-02)	1
LE	14-000001-16	Ball Shooter Housing, DI Blue (-01)	1
Std	14-000001-11	Ball Shooter Housing, Black River (-00)	1
5	30-000021-00	Ball Shooter Sleeve	1
6	13-007007-06	Ball Shooter Power Spring, Silver, 0.035"	1
7	94-004011-12	3/8" Shaft E-Clip	1
8	25-009003-00	Ball Shooter Tip, Black	1
9	10-000025-00	Ball Shooter Cabinet Mtg Plate	1



## Moving Target Assembly 51-000081-00

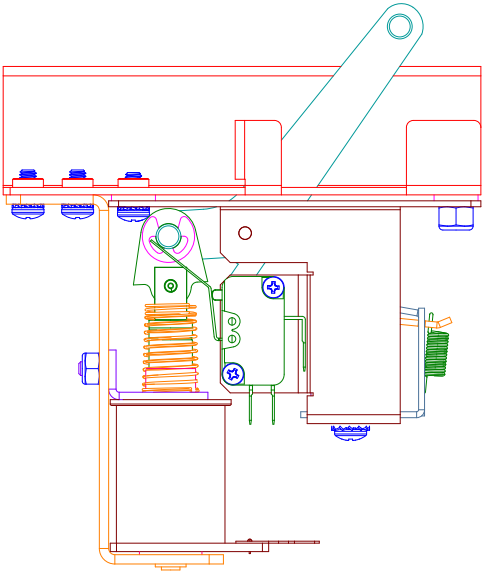
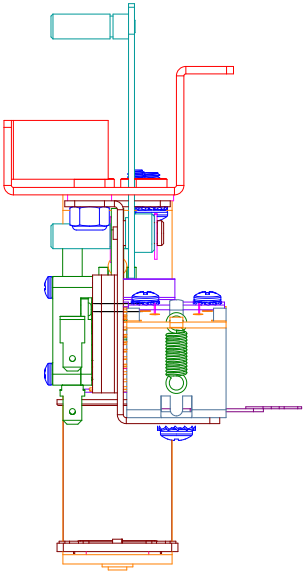
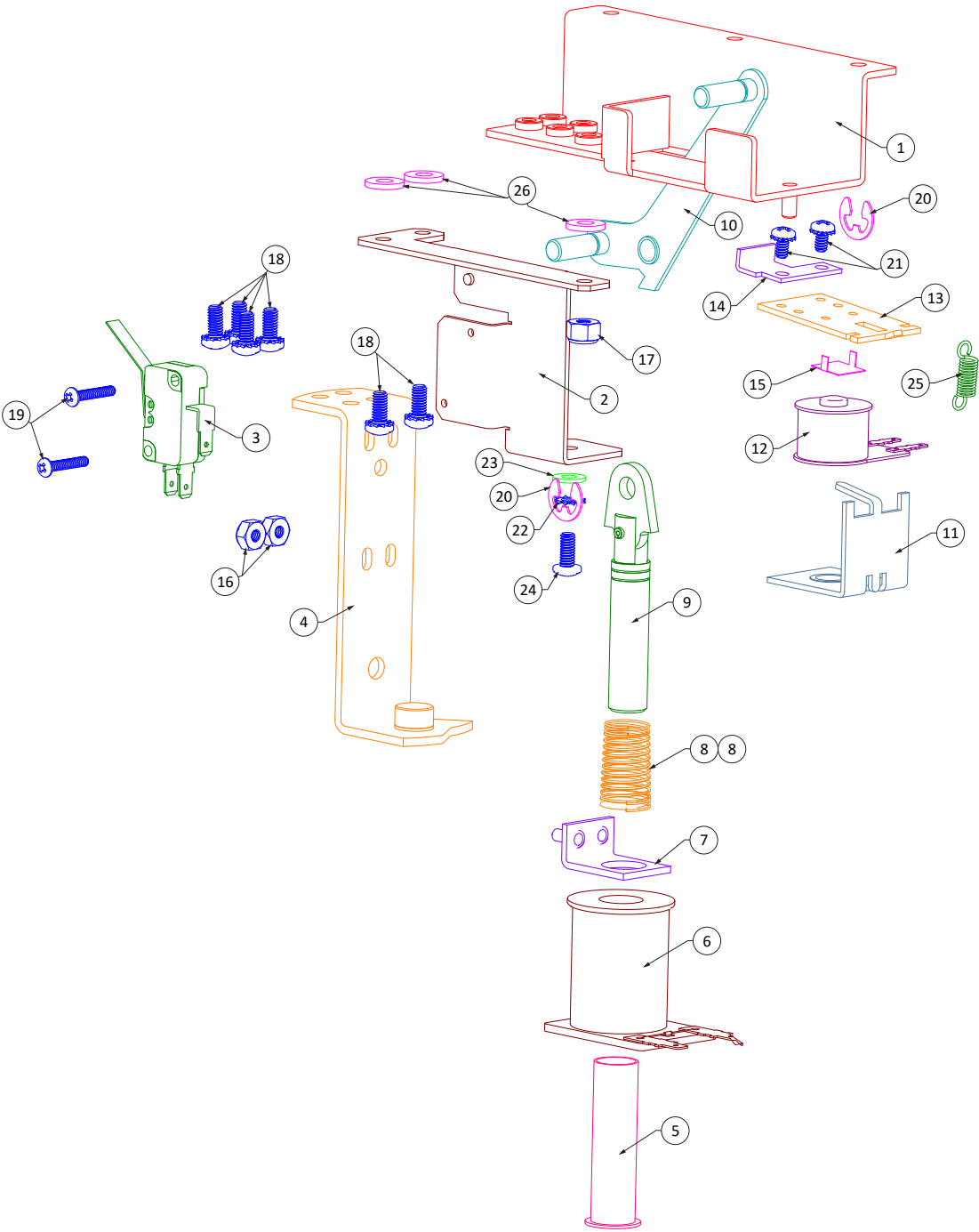
Item	Part Number	Description	Qty	Item	Part Number	Description	Qty
1	10-000211-02	Moving Target Stand-Up Mtg Brkt	1	8	10-000211-04	Moving Target Opto Interrupter Blade	1
2	10-000211-01	Moving Target Rear Brkt	1	9	30-000086-00	Moving Target Cam Follower	1
3	10-000211-00	Moving Target Front Brkt	1	10	91-000010-00	10-32 Nylon Stop Nut	4
4	18-005000-00	U-Shaped Opto, OPB816Z	2	11	80-002008-08	8-32 x 1/2" HWH Phillips MS, Serrated	12
5	23-005009-00	Gear Motor Assy, 12VDC, 8rpm	1	12	80-002010-06	10-32 x 3/8" HWH Phillips MS, Serrated	2
6	51-000081-10	Moving Target Cam Assy	1	13	80-002006-04	6-32 x 1/4" HWH Phillips MS, Serrated	2
a)	11-000043-01	Cam Hub Weldment	1	14	80-000004-10	4-40 x 5/8" PPH MS	8
b)	85-004010-06	10-32 x 3/8" Set Screw, Cup Point	2	15	94-003005-00	#4 x 3/8" Nylon PCB Stand-Off	8
c)	91-000010-00	10-24 Nylon Stop Nut	1	16	15-000007-00	Opto I/O Bd	2
d)	94-003020-05	Round Spacer, 0.25" ID, 0.375" OD, 0.3" L, Alum	1	17	11-000043-00	Moving Target Travel Shaft	1
e)	96-001002-00	Ball Bearing, Double Sealed, 1/4" Shaft, 5/8" OD	1	18	80-002104-06	4-40 x 3/8" HWH MS, Black	4
f)	85-000010-08	10-24 x 1/4" x 1/2" SH Shoulder Bolt	1	NS	30-000052-04	Nylon Cable Clamp, Closed, 1/4"	1
7	10-000211-03	Moving Target Bearing Block Assy	1				





## Moving Tgt Sculpture Mtg Brkt Assembly 51-000081-20

Item	Part Number	Description	Qty
1	10-000211-05	Moving Target Sculpture Mtg Brkt	1
2	15-004127-07	GI LED PCB Assy, T/R LED FP, 7.5V	2
3	80-002006-10	6-32 x 5/8" HWH Phillips MS, Serrated	2
4	94-005202-04	#2 x 1/8" Round Spacer, 1/4" OD, Nylon	2
5	10-000022-01	Curved Switch Plate	1
6	25-001005-00	Target Cushion Foam, 3/8" x 3/4" x 1/4"	1
7	83-000002-06	2-56 x 3/8" PPH Screw, Thread Cutter	2
8	83-003104-04	4-20 x 1/4" Torx FH Screw, Thread Forming	4
9	30-000116-00	DI QED Figure Lightning Bolt, Yellow Acrylic	1
10	32-000040-00	DI Moving Tgt QED Sculpture	1
11	62-000028-01	DI Clear Mylar Moving Tgt Lugs Protector	1
12	18-009015-13	Rectangle Stand-Up Tgt, No Mnt, Lt. Blue	1
13	62-000027-00	DI QED Lapel Decal	1
14	62-000027-01	DI QED Hat Decal	1
15	62-000027-02	DI QED Quantum Electric Co. Shirt Decal	1



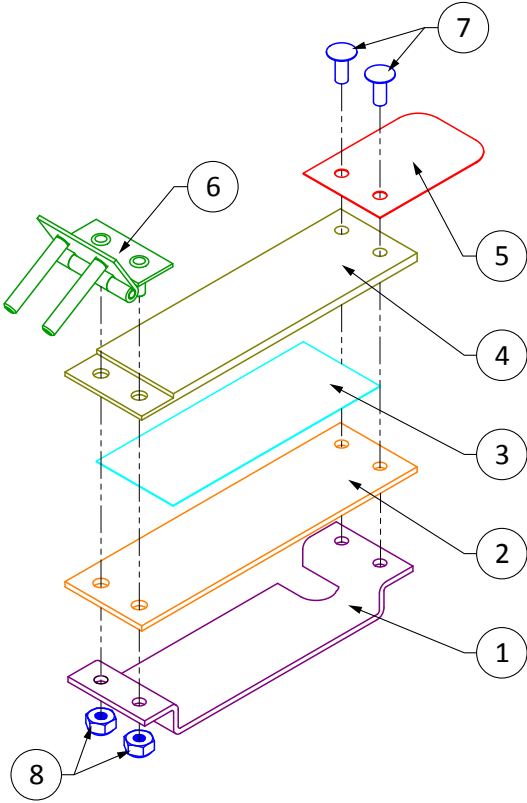
## Trap Door Underside Assembly 51-000082-00

Item	Part Number	Description	Qty
1	10-000213-05	Trap Door Main Brkt	1
2	10-000213-03	Trap Door Latch Trip Coil Brkt	1
3	18-003015-10	Mini Switch w/Bent Blade Actuator	1
4	10-005004-00	Slingshot Coil Brkt	1
5	30-000014-28	1-3/4" Coil Tubing, Straight	1
6	23-000015-00	26-1500 Standard Coil	1
7	10-007000-01	Coil Centering Brkt, 5/8", 3/8" Mnts, 6-32 Studs	1
8	13-007004-00	Slingshot Plunger Return Spring	2
9	11-005003-02	Slingshot Plunger & Link Assy, 2-1/4"	1
10	11-000046-00	Trap Door Open Crank Assy	1
11	10-000213-09	Trap Door Latch Trip Coil Frame & Eyelet Assy	1
12	23-003008-01	26-600 Mini Coil Assy, 0.313" Core	1
13	10-000213-06	Trap Door Latch Coil Armature	1

Item	Part Number	Description	Qty
14	10-000213-04	Trap Door Latch	1
15	10-000213-07	Residual Armature Plate	1
16	91-000006-00	6-32 Nylon Stop Nut	2
17	91-000008-00	8-32 Nylon Stop Nut	1
18	80-001008-06	8-32 x 3/8" PPH MS, SEMS	6
19	80-000004-10	4-40 x 5/8" PPH MS	2
20	94-004011-08	1/4" Shaft E-Clip	2
21	80-001006-04	6-32 x 1/4" PPH MS, SEMS	2
22	92-003108-00	#8 Ext-Tooth Lock Washer, 0.168" ID, 0.381" OD	1
23	92-000308-00	#8 Flat Washer, 0.172" ID, 0.375" OD, Brass	1
24	80-000308-06	8-32 x 3/8" PPH MS, Brass	1
25	13-007019-00	Trap Door Latch Trip Coil Extension Spring	1
26	92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	3

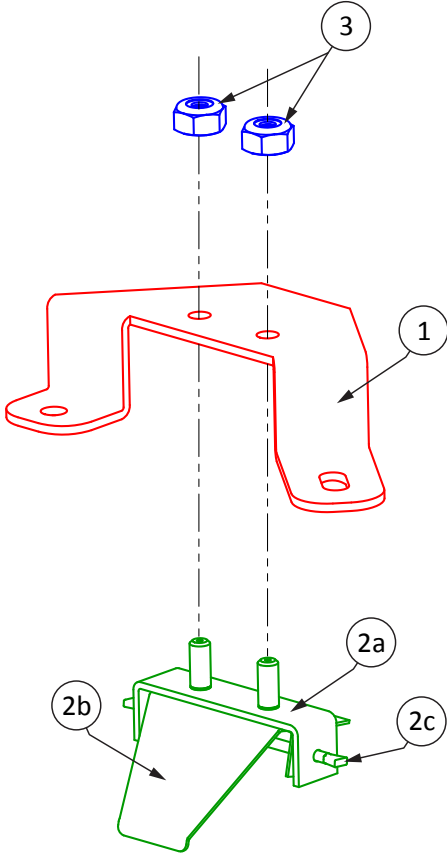
DI Trap Door Surface Assembly  
51-000082-10

Item	Part Number	Description	Qty
1	10-000213-00	Trap Door Deflector Brkt	1
2	10-000213-01	Trap Door Top Plate	1
3	62-000029-03	DI Trap Door/PROPERTY OF BOB Decal	1
4	30-000110-00	Trap Door Cover	1
5	11-006009-00	Trap Door Spring Steel Flap	1
6	10-000213-10	Trap Door Hinge, 4 Knuckles	1
7	93-000000-10	1/8" x 5/16" Semi-Tubular Rivet, TH	2
8	91-000004-00	4-40 Nylon Stop Nut	2

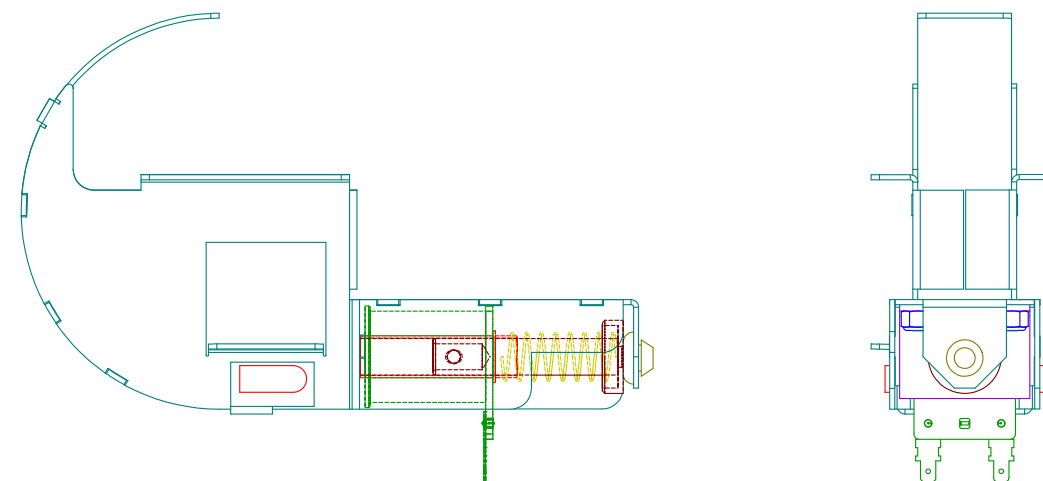
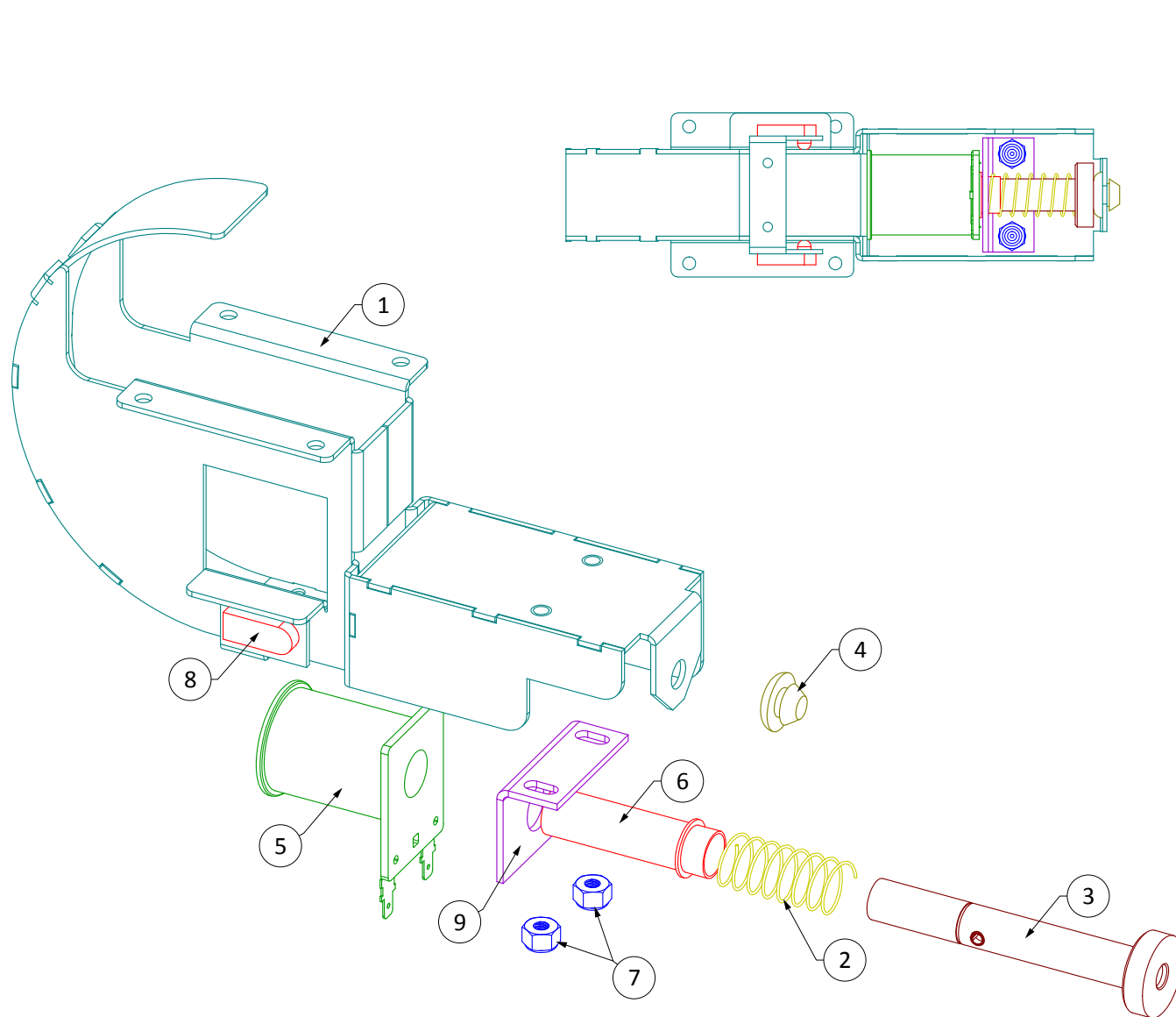


Flap Gate Assembly  
51-000085-00

Item	Part Number	Description	Qty
1	10-000218-00	Flap Gate Mtg Brkt	1
2	51-000085-10	Flap Gate PEM Brkt Assy	1
a)	10-000218-01	Flap Gate PEM Brkt	1
b)	11-006011-00	Spring Steel Flap/Rebound Gate	1
c)	13-003028-00	Flap Gate Pivot Wire	1
3	91-000006-00	6-32 Nylon Stop Nut	2

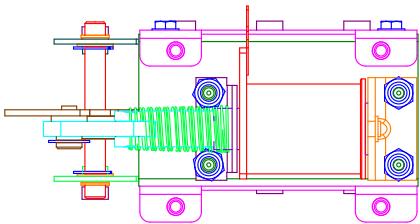
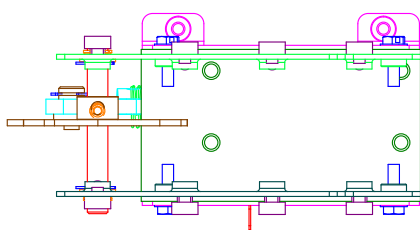
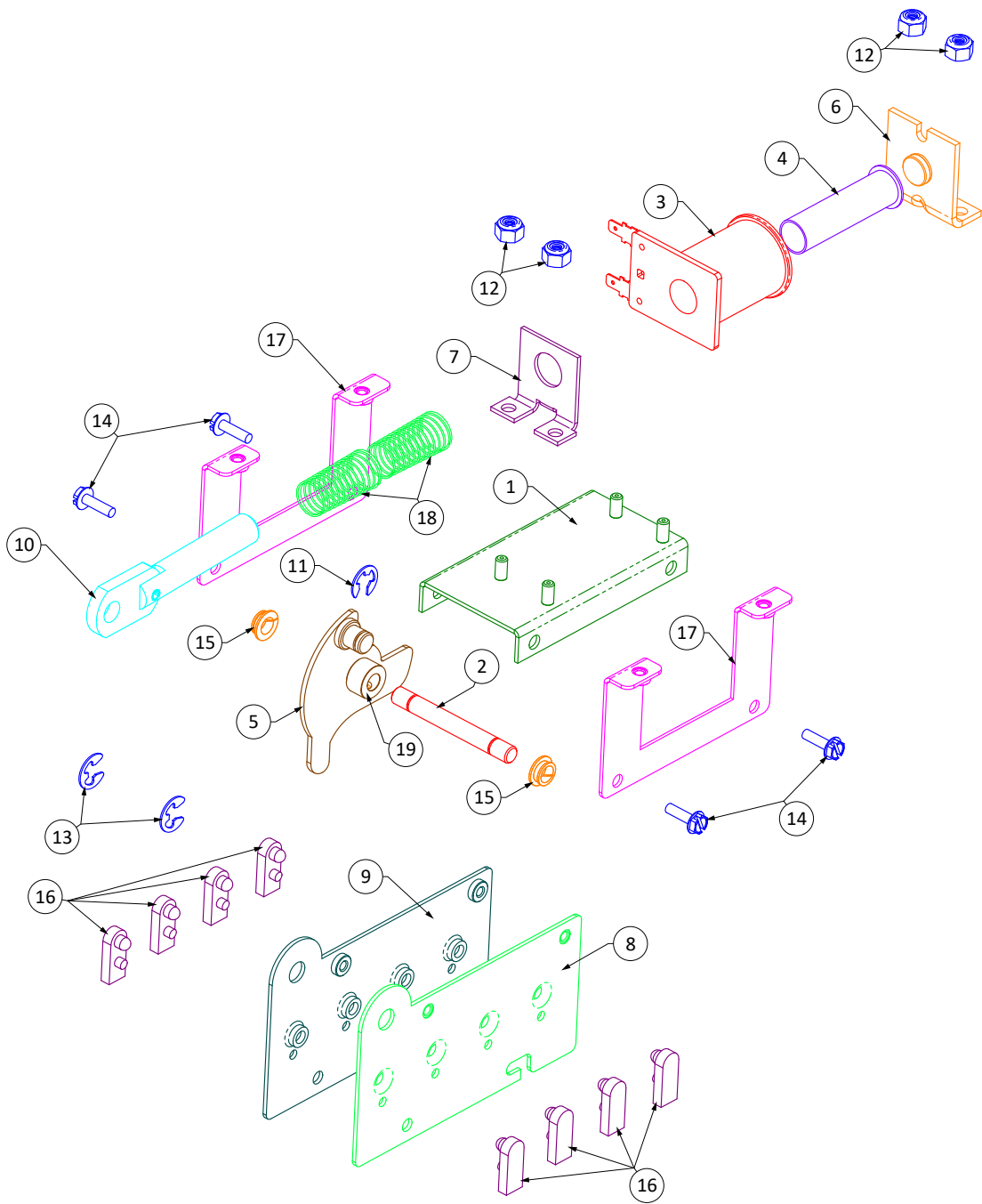






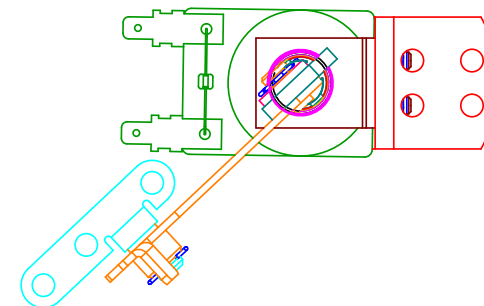
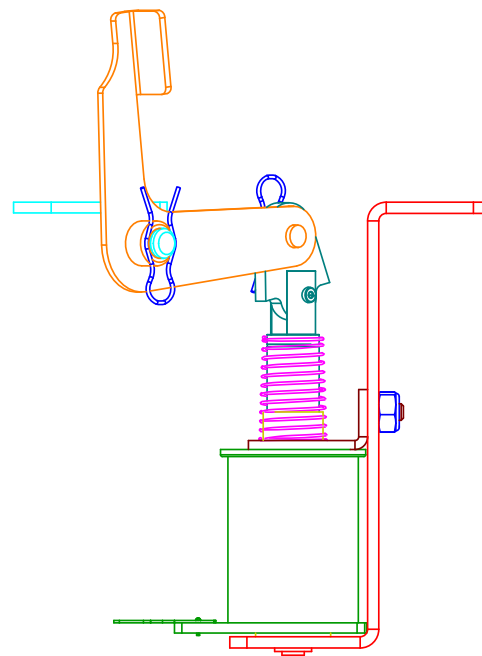
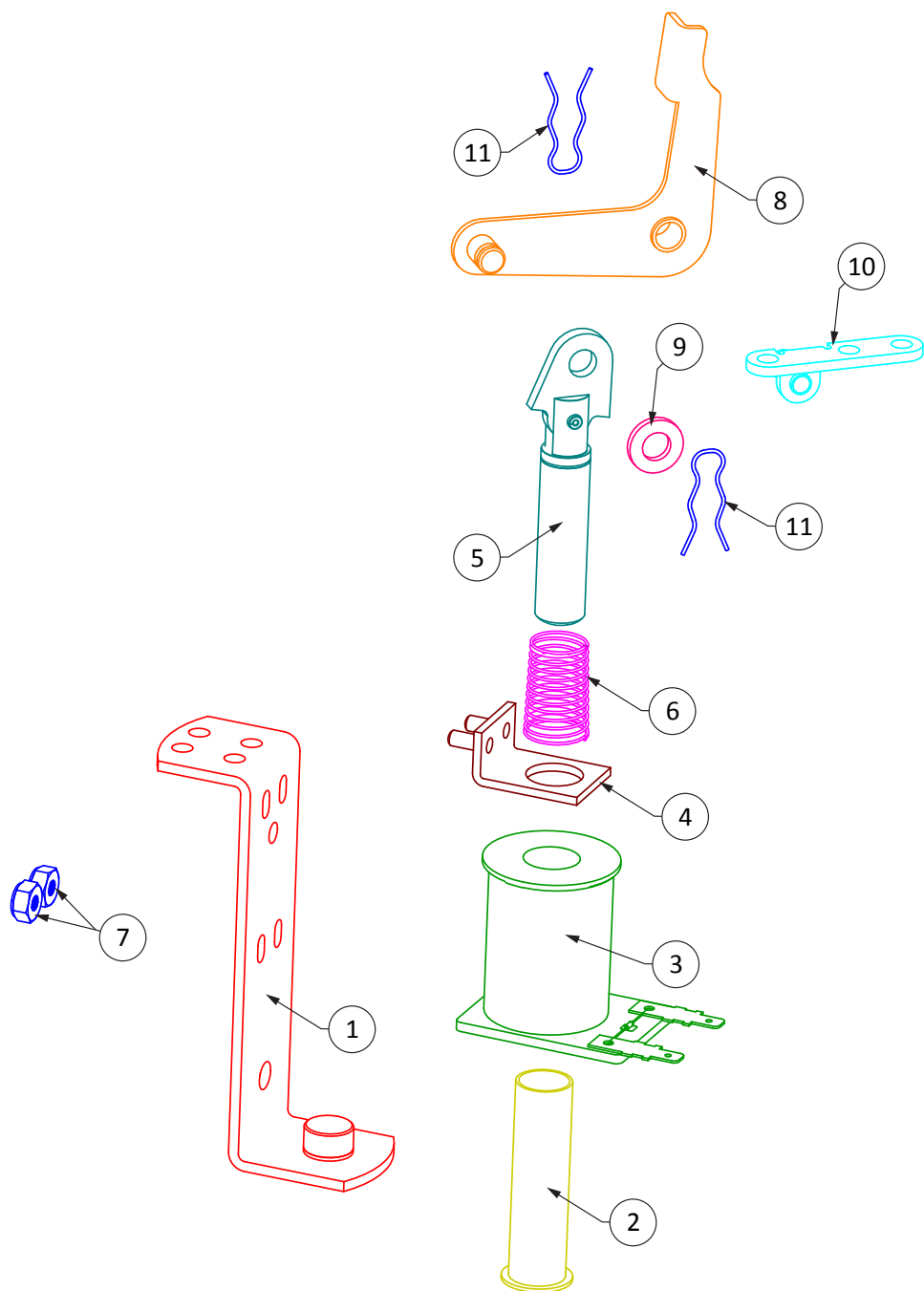
## Ball Scoop Assembly, Left Side Entrance 51-000083-00

Item	Part Number	Description	Qty
1	10-005036-00	Ball Scoop Weldment, Left Side Entrance	1
2	13-007005-00	VUK Plunger Return Spring	1
3	11-005001-00	VUK Armature Plunger Assy	1
4	25-009001-00	Rubber Bumper Plug, Black	1
5	23-000003-00	23-800 Standard Coil	1
6	30-000014-30-1	1-7/8" Coil Tubing, Flanged	1
7	91-000008-00	8-32 Nylon Stop Nut	2
8	19-003117-00	Ball Scoop Opto Pair Assy	1
9	10-007014-02	Coil Centering Brkt, 5/8", Slotted, 1.56" W	1



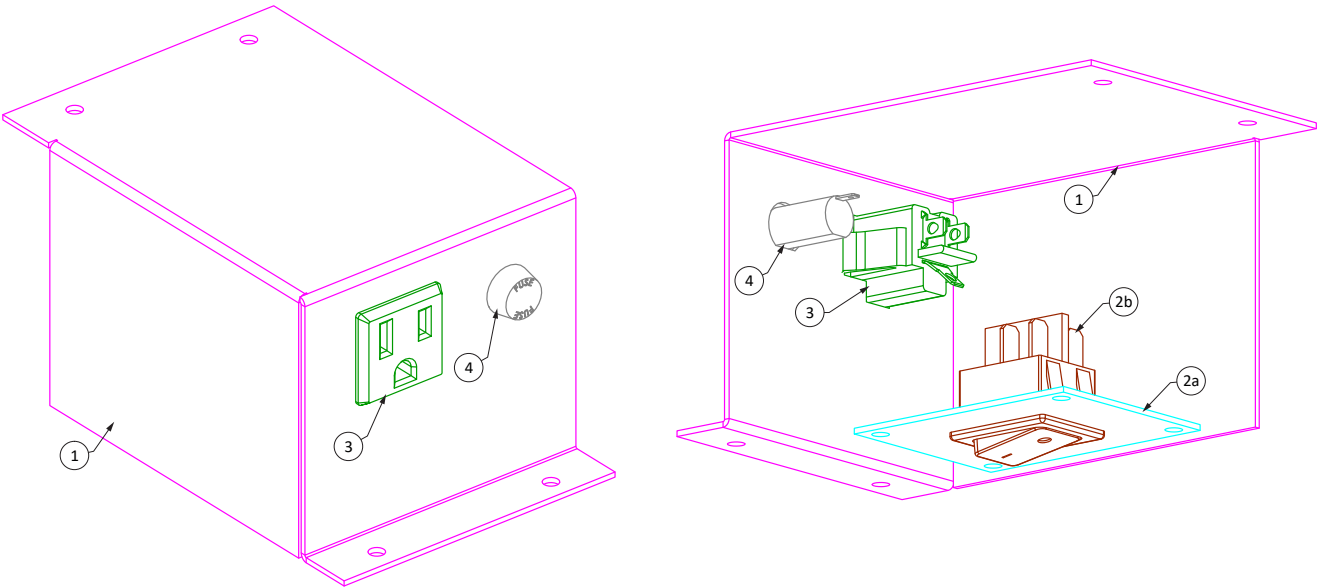
### 3-Ball Lock Assembly 51-000084-00

Item	Part Number	Description	Qty
1	10-000216-00	3-Ball Lock Coil Brkt	1
2	11-000044-00	3-Ball Lock Cam Shaft	1
3	23-000015-00	26-1500 Standard Coil	1
4	30-000014-30	1-7/8" Coil Tubing, Straight	1
5	11-005013-00	3-Ball Lock Cam Assy	1
6	10-007008-00	Drop Tgt Coil Stop Brkt	1
7	10-007009-00	Coil Centering Brkt, 3/4"	1
8	10-000216-01	3-Ball Lock Side Plate, Right	1
9	10-000216-02	3-Ball Lock Side Plate, Left	1
10	11-005000-00	Flipper Coil Plunger & Link Assy	1
11	94-004011-10	5/16" Shaft E-Clip	1
12	91-000008-00	8-32 Nylon Stop Nut	4
13	94-004011-08	1/4" Shaft E-Clip	2
14	80-002008-06	8-32 x 3/8" HWH Phillips MS, Serrated	4
15	30-000071-00	4L1-FF Snap-In Nyliner	2
16	18-007020-24-07	Opto Pair Assy, 24" Cable, VIO	4
17	10-000216-04	3-Ball Lock Building Mtg Brkt	2
18	13-007004-00	Slingshot Plunger Return Spring	2
19	85-004010-02	10-32 x 1/8" Set Screw, Cup Point	1



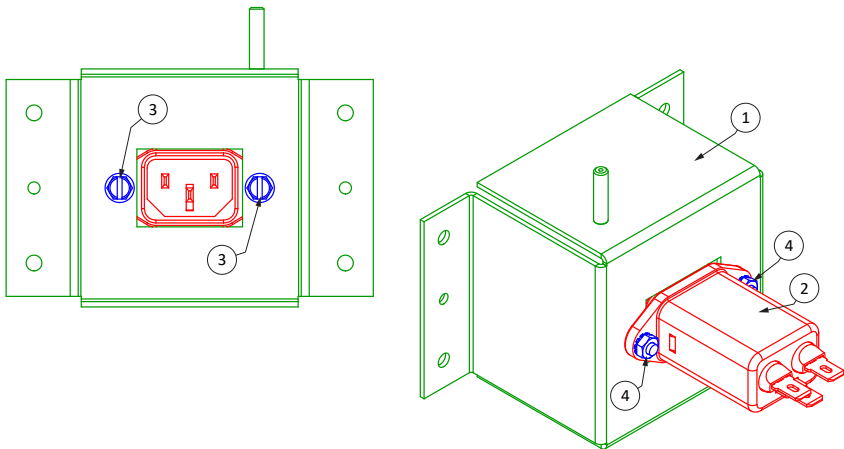
## Inline Kicker Assembly 51-000086-00

Item	Part Number	Description	Qty
1	10-005004-00	Slingshot Coil Brkt	1
2	30-000014-28	1-3/4" Coil Tubing, Straight	1
3	23-000010-00	26-1200 Standard Coil	1
4	10-007000-01	Coil Centering Brkt, 5/8", 3/8" Mnts, 6-32 Studs	1
5	11-005003-01	Slingshot Plunger & Link Assy, 2-1/8"	1
6	13-007004-00	Slingshot Plunger Return Spring	1
7	91-000006-00	6-32 Nylon Stop Nut	2
8	10-000042-20	Inline Kicker Crank Assy, Right	1
9	95-002651-20-67	Flat Washer, 0.265" ID, 0.5" OD, 0.067" TH	1
10	10-000043-20	Inline Kicker Crank Mtg Brkt	1
11	13-009002-00	Hairpin Clip	2



**Power Box Assembly, Front Outlet**  
**51-005001-01**

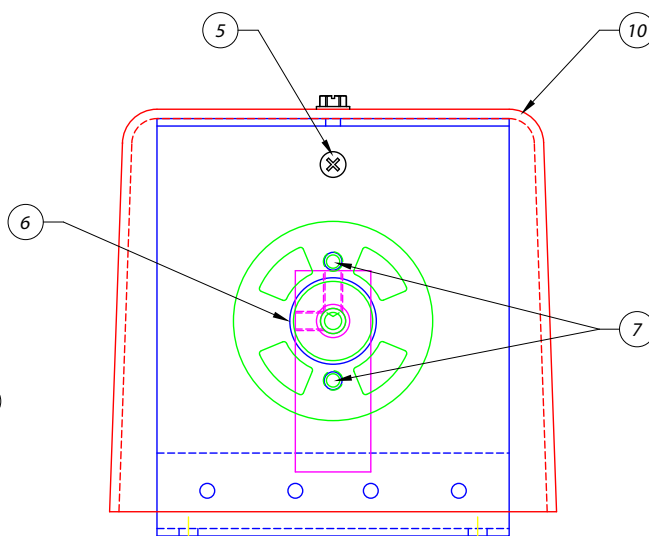
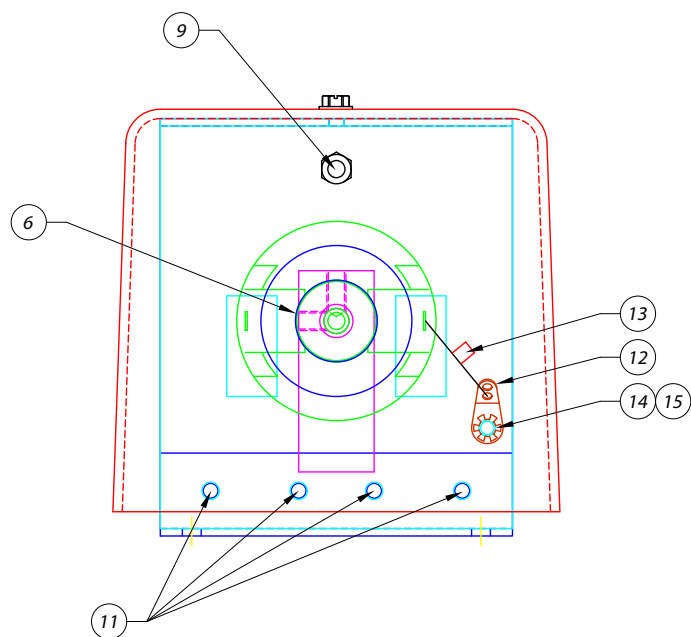
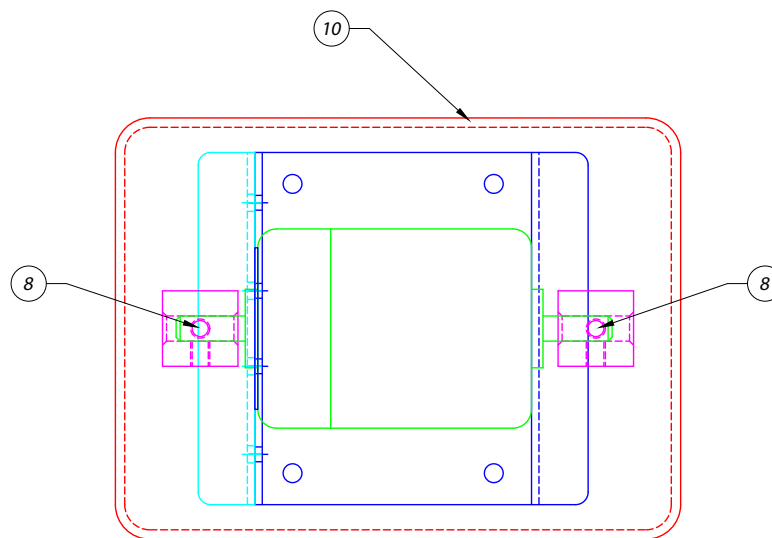
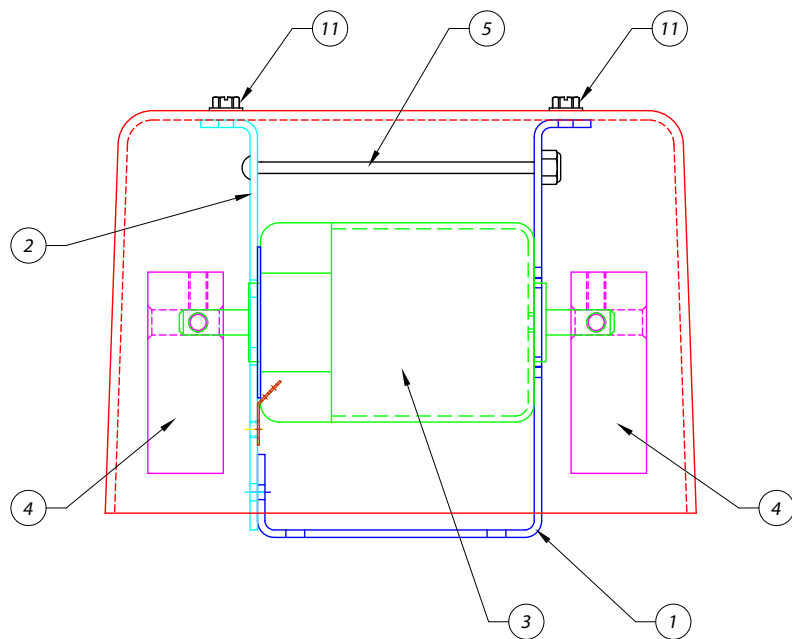
Item	Part Number	Description	Qty
1	10-000008-01	Cabinet Metal Power Box, Front Outlet	1
2	18-007012-00	On/Off Switch Assy	1
a)	10-000087-00	On/Off Switch Mtg Brkt	1
b)	18-003006-00	On/Off Switch, Rocker Style	1
3	22-000001-00	USA Service Outlet, Snap-In	1
4	22-008000-00	Line Fuse Holder	1
USA	170-000110-SR	Fuse, Slow Blow, 10A, 125V, 0.25" x 1.25", 3AG	1
Euro	170-000205-SR	Fuse, Slow Blow, 5A, 250V, 0.25" x 1.25", 3AG	1
NS	180-000000-00	Varistor, USA	1
NS	180-000002-00	Varistor, Europe	1
NS	180-000001-00	Thermistor, USA	1
NS	180-000003-00	Thermistor, Europe	1



**Line Filter Box Assembly**  
**51-005023-00**

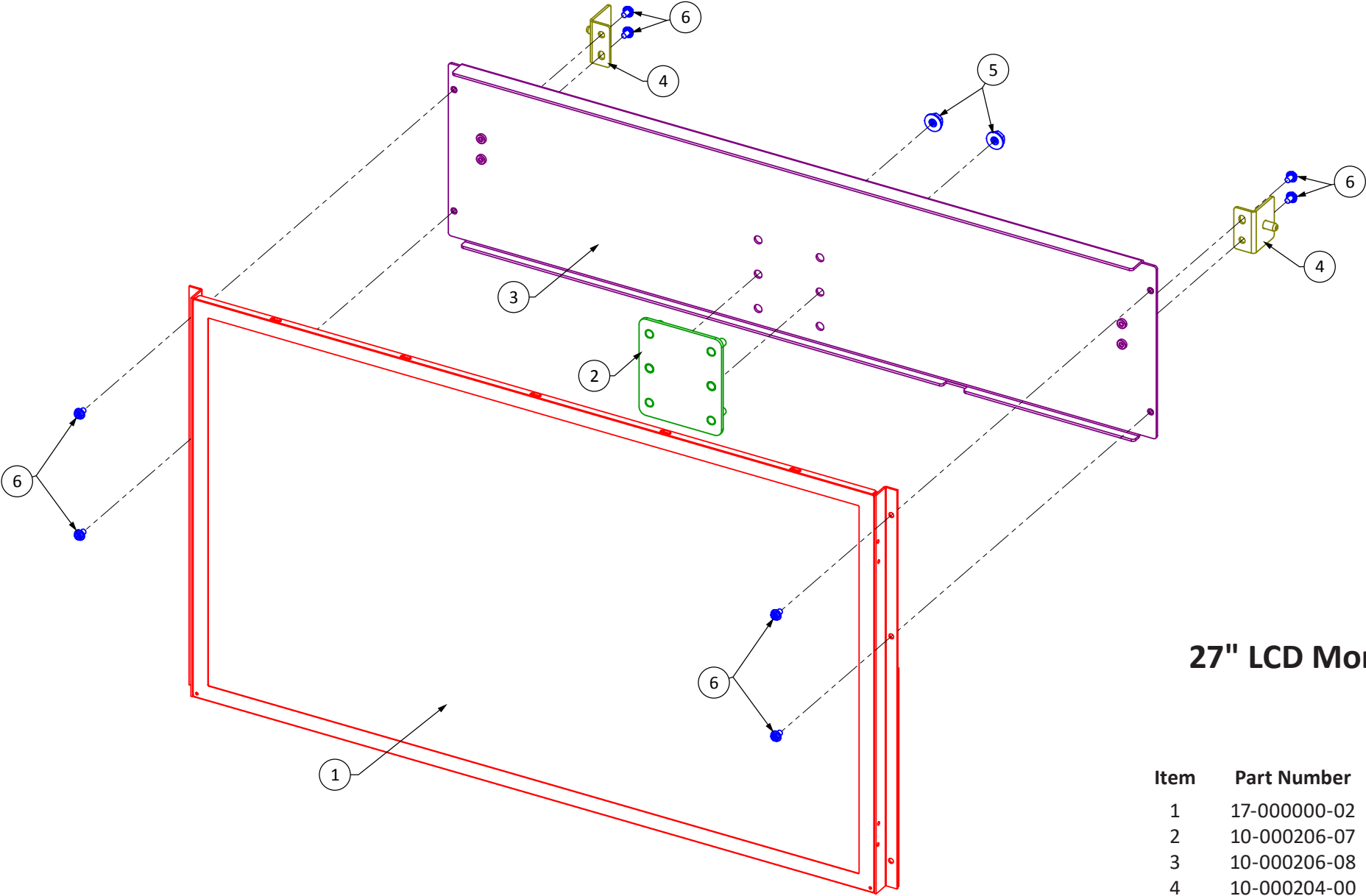
Item	Part Number	Description	Qty
1	10-000009-00	Line Filter Mtg Brkt	1
2	22-000000-00	Line Filter	1
3	80-002006-06	6-32 x 3/8" HWH Phillips MS, Serrated	2
4	91-001006-00	6-32 Keps Nut	2
NS	91-001008-00	8-32 Keps Nut	2





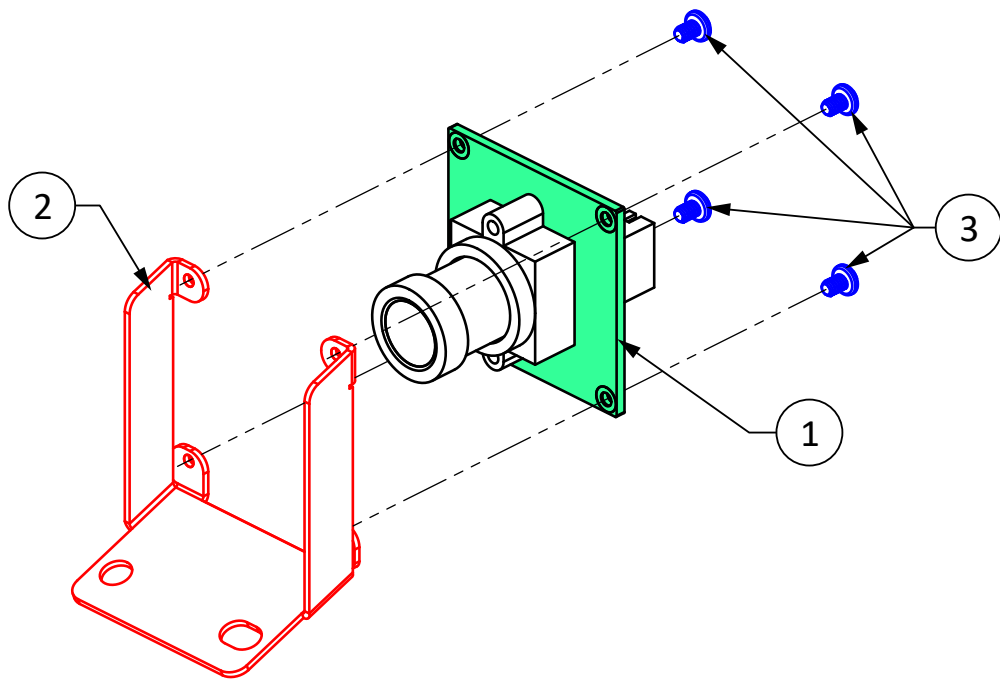
## Shaker Motor Assembly 51-005027-01

Item	Part Number	Description	Qty
1	10-005006-02	Shaker Motor Mtg Brkt	1
2	10-005006-03	Shaker Motor Front Brkt	1
3	23-005003-01	Shaker Motor	1
4	11-000010-00	Eccentric Weight	2
5	80-000006-48	6-32 x 3" PPH MS	1
6	95-004000-00	Insulator Washer	2
7	80-000010-08	10-32 x 1/2" PPH MS	2
8	85-004008-04	8-32 x 1/4" Set Screw, Black	2
9	91-000006-00	6-32 Nylon Stop Nut	1
10	30-000011-00	Shaker Motor Plastic Cover, White	1
11	80-002008-04	8-32 x 1/4" HWH Phillips MS, Serrated	6
12	90-000007-00	#8 Terminal Lockwasher, Angled	1
13	109-00100M-050	Capacitor, Elect (Radial), 100μF, 50V, 20%	1
14	80-002008-06	8-32 x 3/8" HWH Phillips MS, Serrated	1
15	91-002008-00	8-32 Hex Nut	1



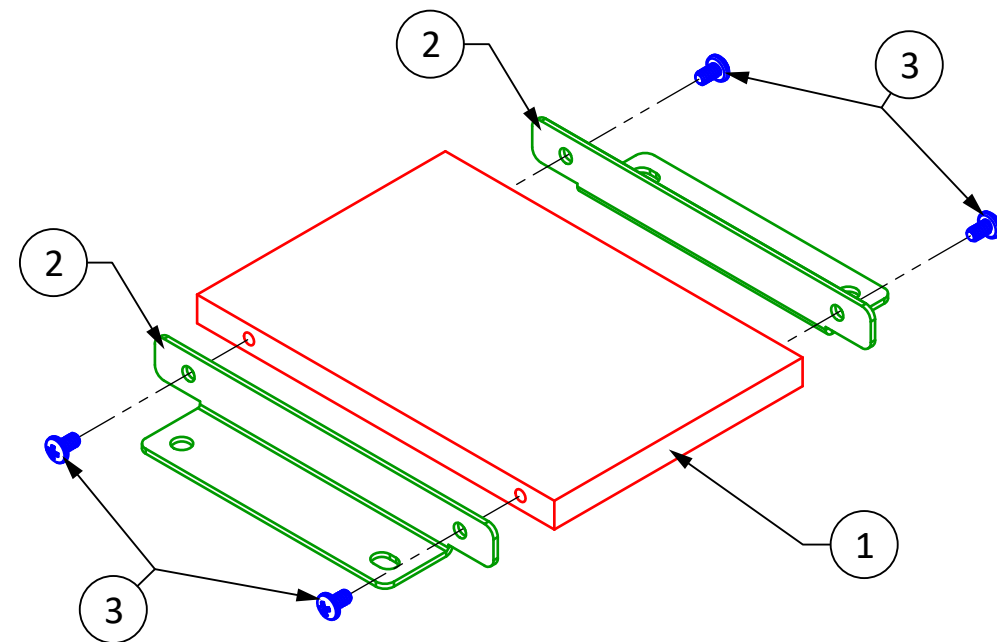
27" LCD Monitor Assembly, Backbox PCBs  
51-005032-10

Item	Part Number	Description	Qty
1	17-000000-02	27" LCD Panel, HD, Open Frame, Shielded	1
2	10-000206-07	27" LCD Panel Mtg Plate	1
3	10-000206-08	27" LCD Panel Mtg Brkt	1
4	10-000204-00	27" LCD Latch Brkt	2
5	91-002025-00	1/4-20 Flange Nut	2
6	80-002008-04	8-32 x 1/4" HWH Phillips MS, Serrated	8



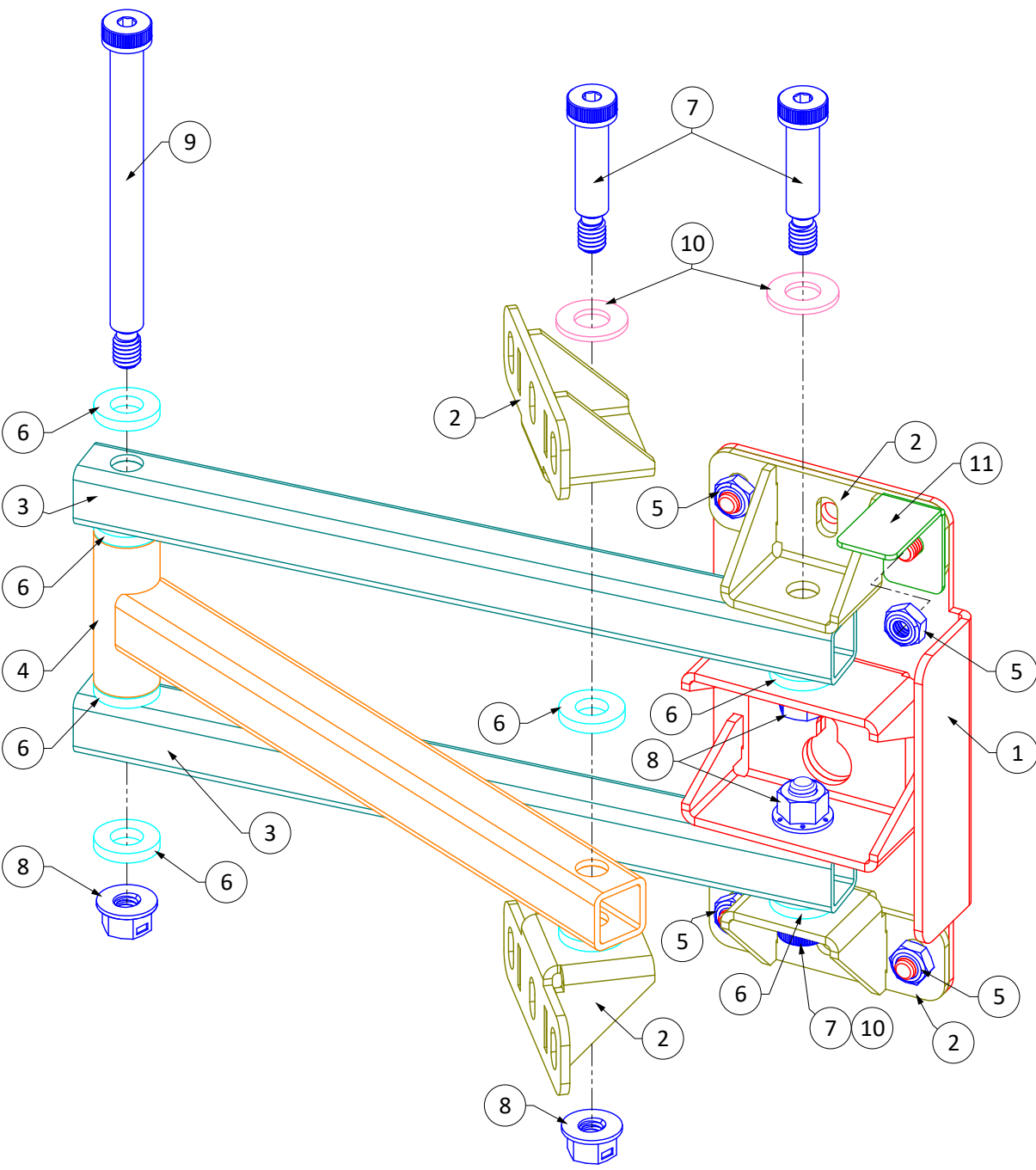
**USB Camera Assembly**  
**51-005041-00**

Item	Part Number	Description	Qty
1	15-005034-00	USB Camera Module, 1MP, 720P, 3.6mm Lens	1
2	10-000226-00	USB Camera Mtg Brkt	1
3	80-000002-04	2-56 x 1/4" PPH MS	4



**Backbox Mount Solid State Drive Assembly, 60GB**  
**51-005044-02**

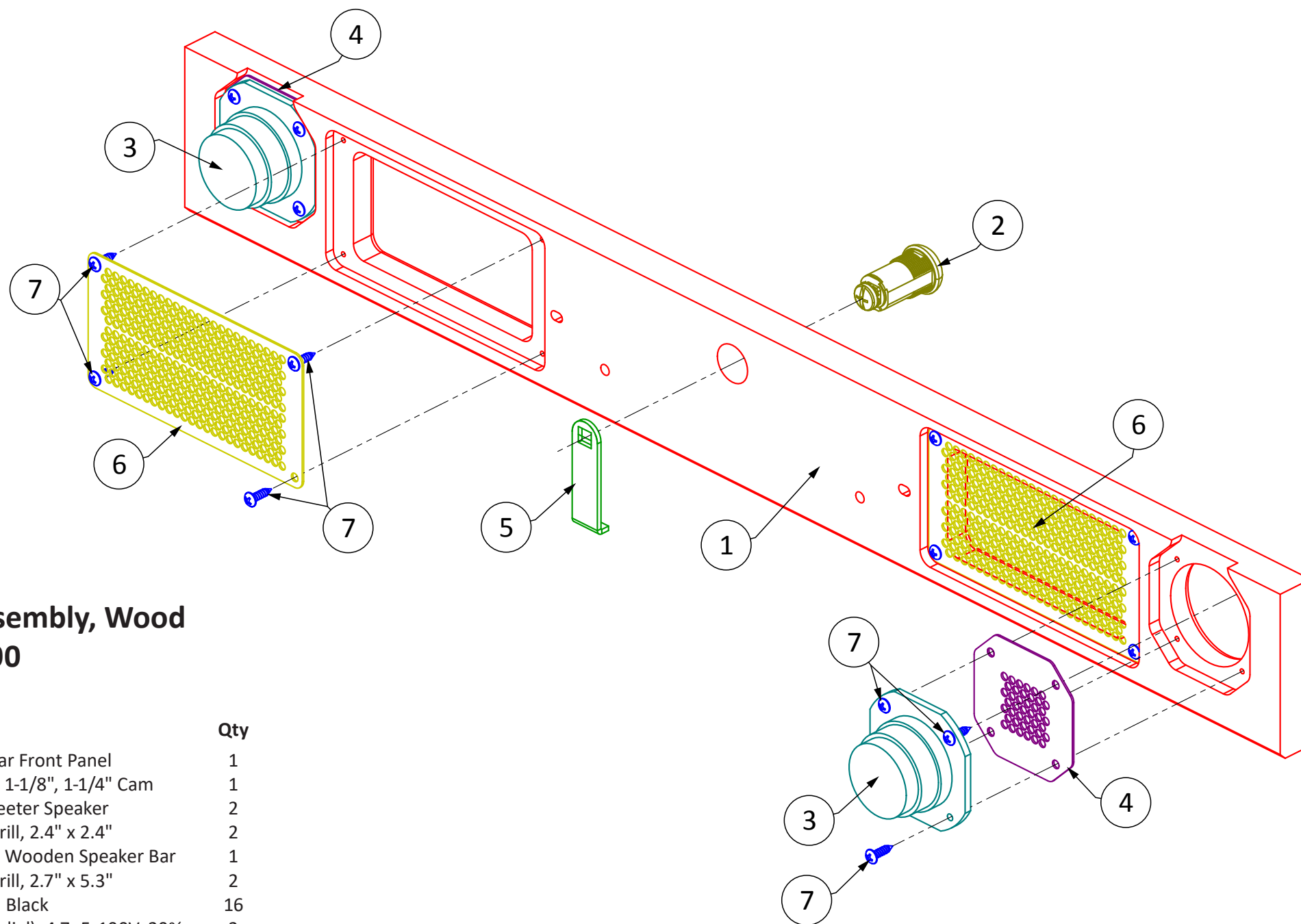
Item	Part Number	Description	Qty
1	15-000003-02	Solid State Drive, 60GB	1
2	10-000209-00	Solid State Drive Mtg Brkt	2
3	80-000004-03	4-40 x 3/16" PPH MS	4



27" LCD Pivot/Swing Assembly  
51-005043-00

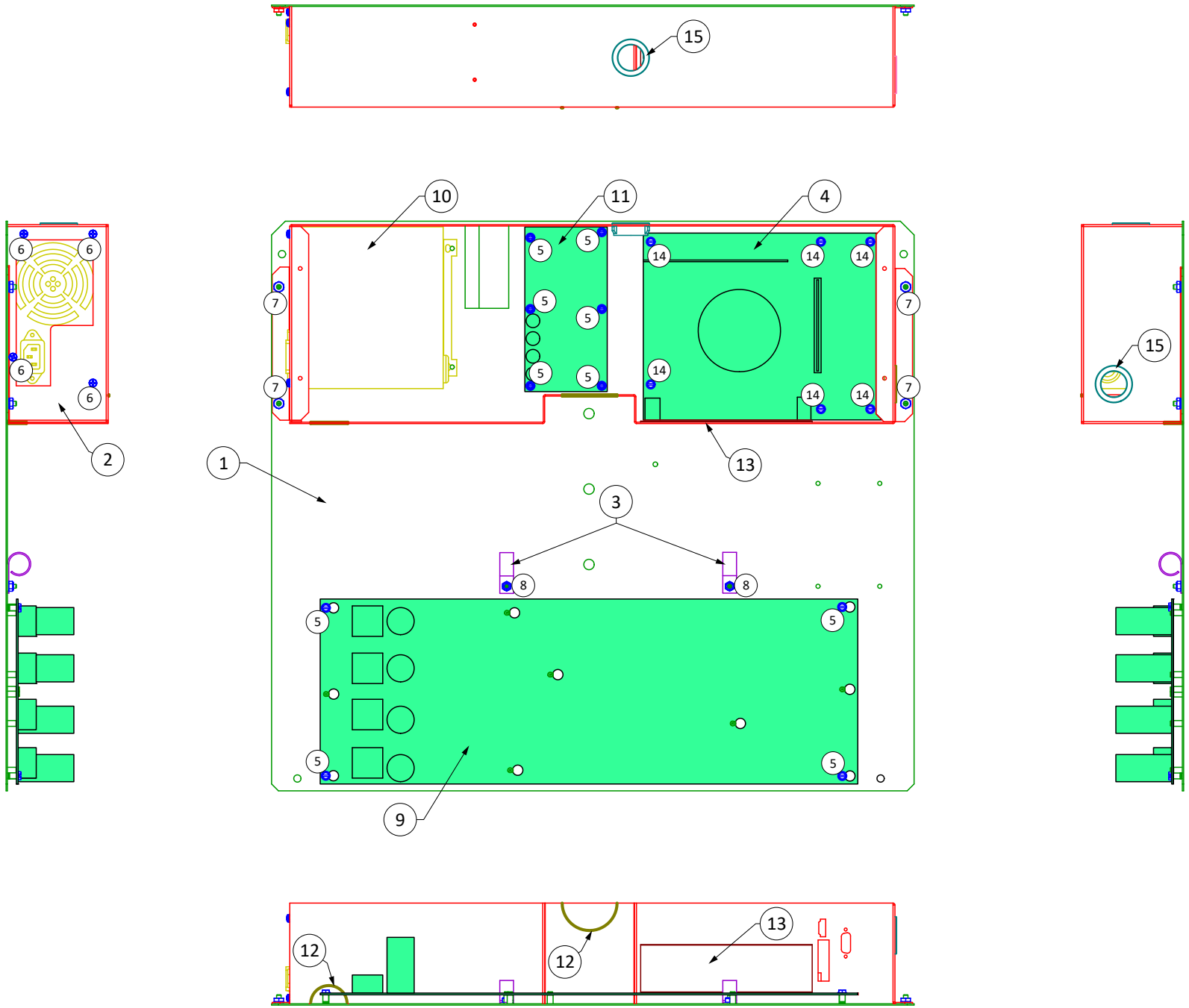
Item	Part Number	Description	Qty
1	10-000206-00	27" LCD Pivot Backbox Main Plate Weldment	1
2	10-000206-02	27" LCD Swivel Brkt	4
3	10-000206-03	27" LCD Pivot/Swing Extension, 9.25"	2
4	10-000206-04	27" LCD Swing Arm	1
5	91-000025-01	1/4-20 Nylon Stop Nut	4
6	96-001001-00	Thrust Bearing, Oil-Embedded, 3/8" Shaft, 1/8" TH	10
7	85-000516-20	5/16-18 x 3/8" x 1-1/4" SH Shoulder Bolt	3
8	91-006516-00	5/16-18 Distorted-Thread Locknut, Flanged	4
9	85-000516-64	5/16-18 x 3/8" x 4" SH Shoulder Bolt	1
10	92-000038-01	3/8" Flat Washer, 0.406" ID, 0.812" OD, 0.065" TH	3
11	10-000236-02	Backbox PCBs EMI Shield Support Brkt	1





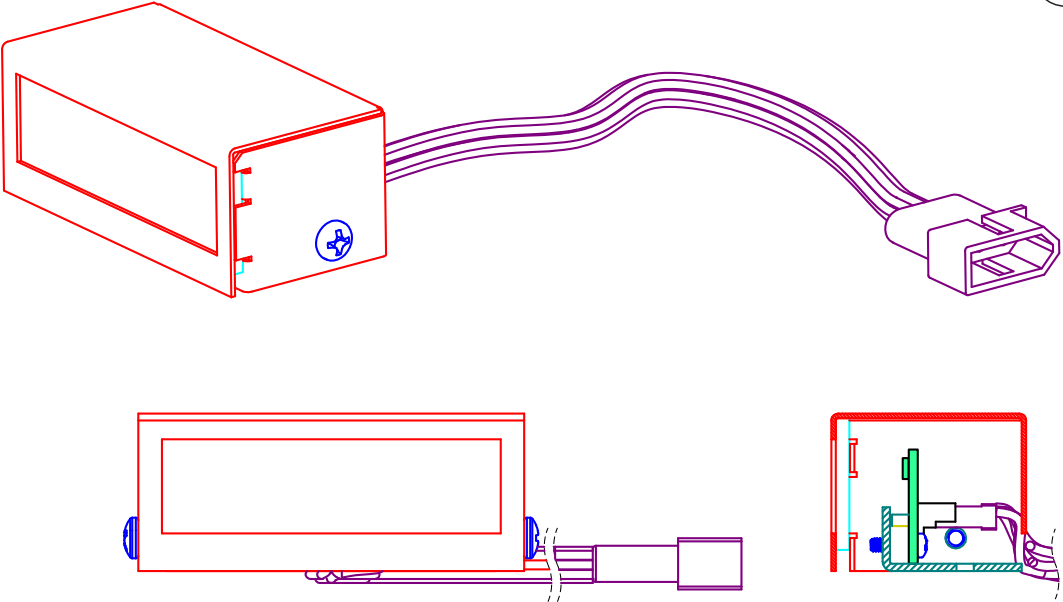
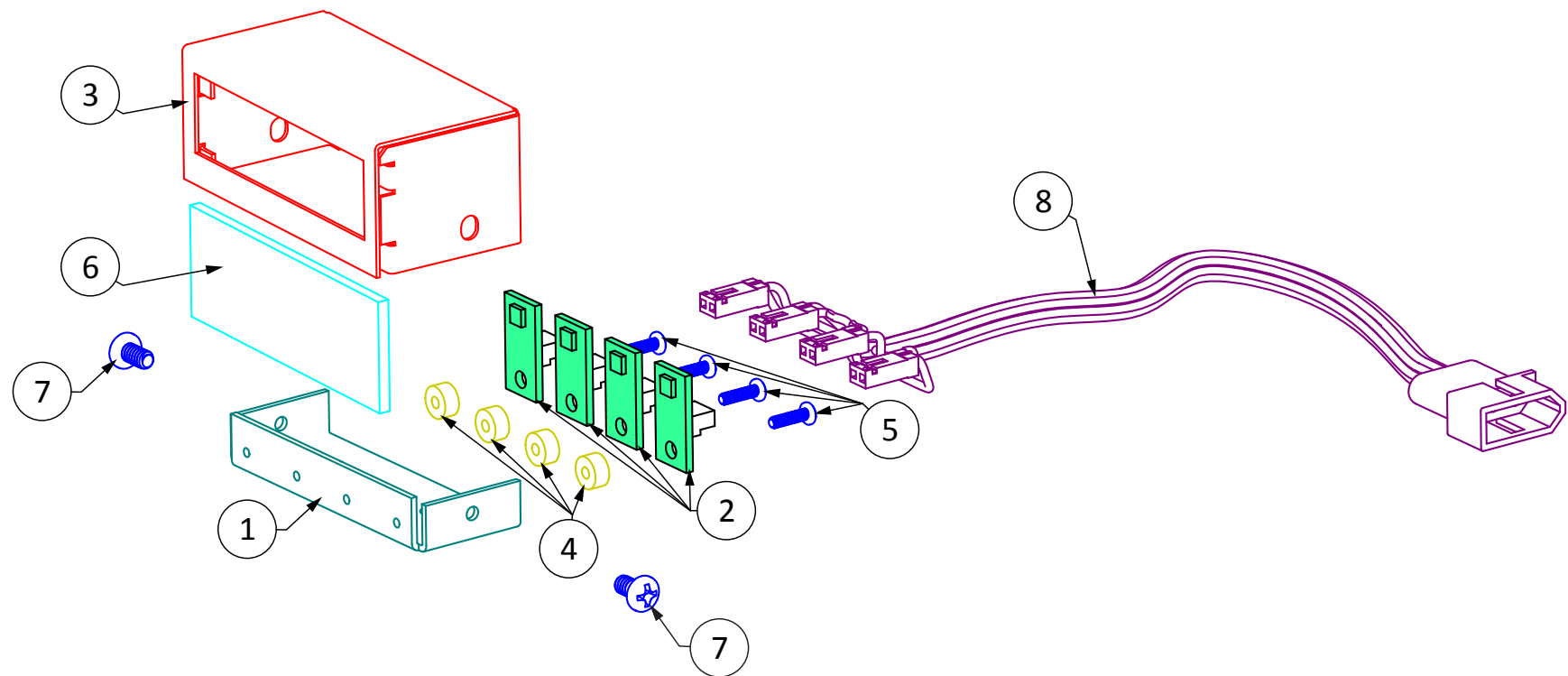
## Backbox Speaker Bar Assembly, Wood 51-005053-00

Item	Part Number	Description	Qty
1	05-003033-08	Backbox Speaker Bar Front Panel	1
2	51-005012-02	Backbox Lock Assy, 1-1/8", 1-1/4" Cam	1
3	17-006000-00	2" Mylar Dome Tweeter Speaker	2
4	10-000002-10	Backbox Speaker Grill, 2.4" x 2.4"	2
5	10-000224-00	Backbox Lock Cam, Wooden Speaker Bar	1
6	10-000002-11	Backbox Speaker Grill, 2.7" x 5.3"	2
7	82-000106-08	#6 x 1/2" PPH SMS, Black	16
NS	109-475M-100	Capacitor, Elect (Radial), 4.7μF, 100V, 20%	2



## Backbox Mount PCB Assembly 51-005045-00

Item	Part Number	Description	Qty
1	10-000208-00	Backbox PCB PEM Plate	1
2	10-000236-00	Backbox PCBs EMI Shield Enclosure	1
3	30-000049-12	Nylon Cable Clamp, Open, 3/4"	2
4	15-000000-01	CPU Bd, H81M-P33	1
	15-000012-00	4GB Memory Module	1
	15-000040-00	Intel Pentium Processor Bd	1
	15-000054-00	DI Game Security Dongle	1
	15-000057-00	Auxiliary Graphics Card, PCIe x16	1
5	80-002006-06	6-32 x 3/8" HWH Phillips MS, Serrated	10
6	80-001006-04	6-32 x 1/4" PPH MS, SEMS	4
7	91-001008-00	8-32 Keps Nut	4
8	91-000006-00	6-32 Nylon Stop Nut	2
9	15-004001-03	I/O PCB Assy, DI	1
10	16-000006-02	PCB DC Power Supply Assy, 7.5/4VDC, DI Config	1
11	15-000002-00	Sound Amplifier Bd	1
12	30-008005-00	Plastic Edge Trim w/Adhesive	7"
13	70-009008-00	CPU Bd Grounding Gasket	1
14	80-002006-08	6-32 x 1/2" HWH Phillips MS, Serrated	6
15	25-009013-00	PCB Chassis CPU Grommet, 1"	2



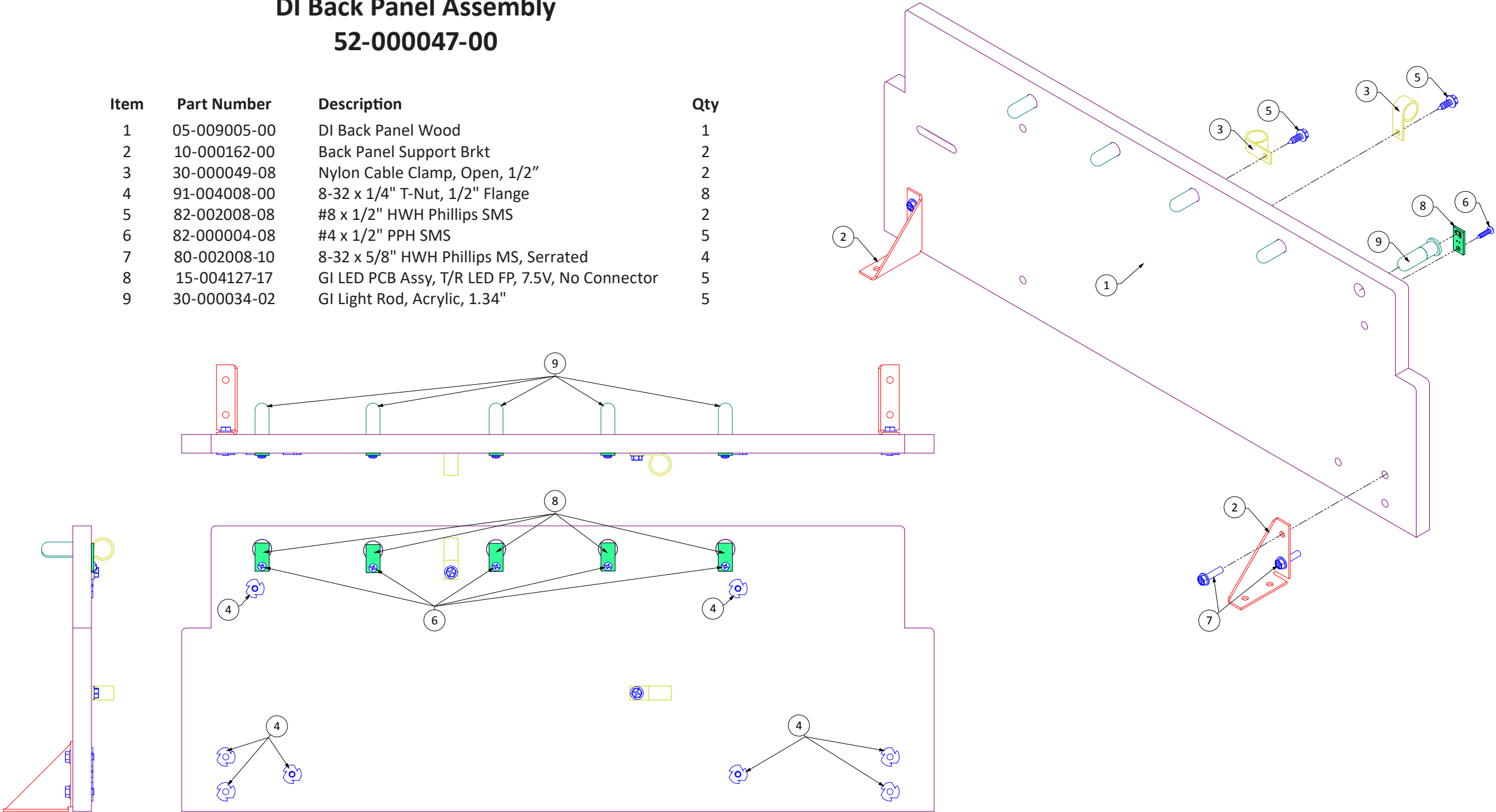
**Flasher Topper Assembly**  
**51-005048-00**

Item	Part Number	Description	Qty
1	10-000235-10	Flasher Topper Assy Base	1
2	15-004127-07	GI LED PCB Assy, T/R LED FP, 7.5V	4
3	10-000235-00	Flasher Topper Assy Cover	1
4	94-005202-04	#2 x 1/8" Round Spacer, 1/4"OD, Nylon	4
5	80-000002-05	2-56 x 5/16" PPH MS	4
6	30-000119-00	Flasher Topper Assy Window, Translucent White	1
7	80-000106-04	6-32 x1/4" PPH MS, Black	2
8	19-009031-04	Flasher Topper Internal Cable	1

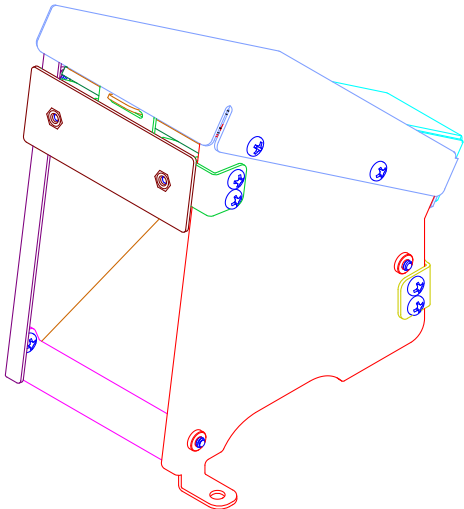
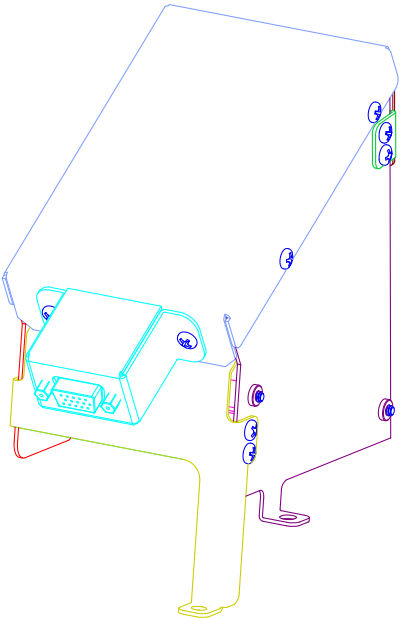
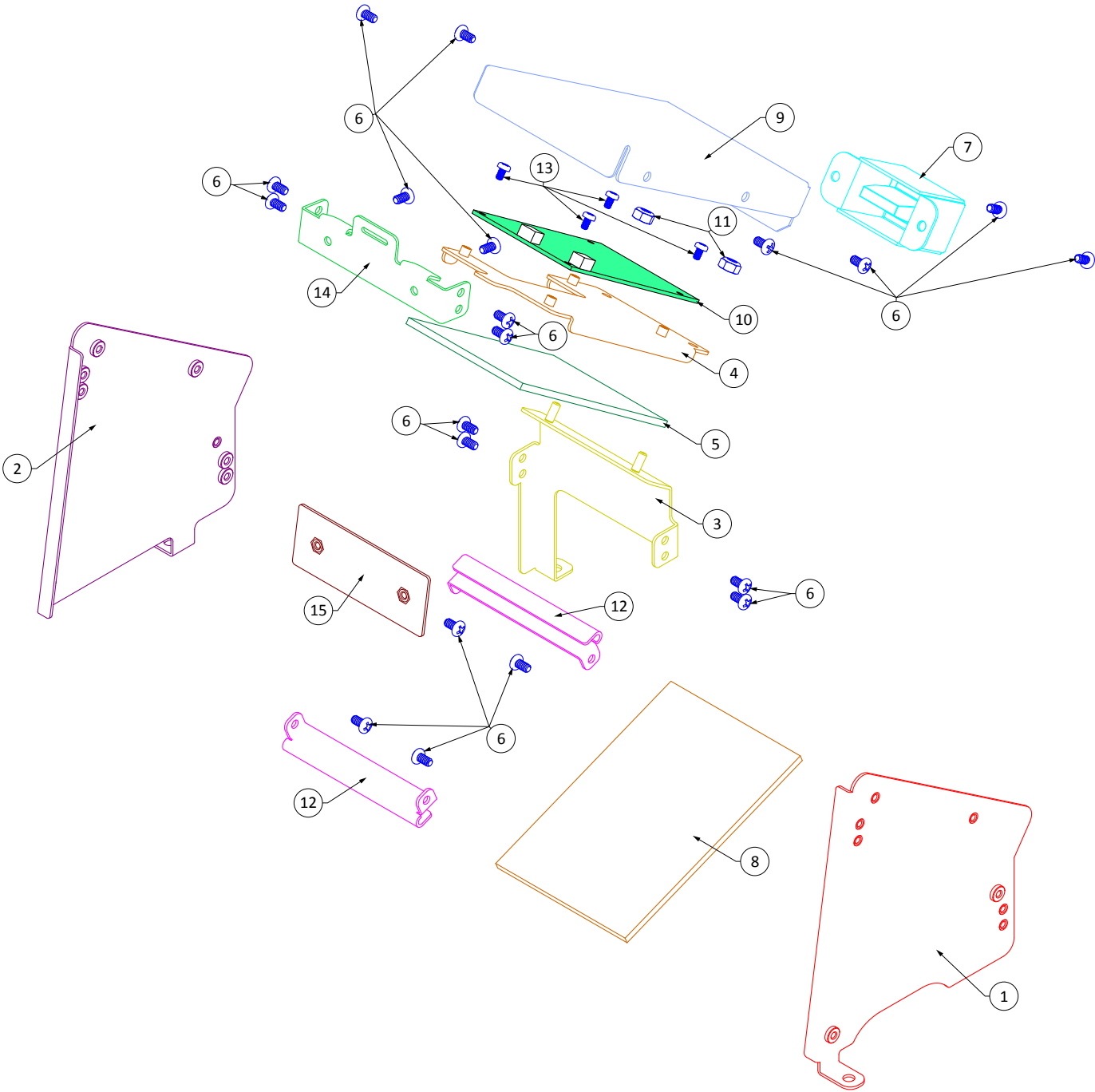
# DI Back Panel Assembly

## 52-000047-00

Item	Part Number	Description	Qty
1	05-009005-00	DI Back Panel Wood	1
2	10-000162-00	Back Panel Support Brkt	2
3	30-000049-08	Nylon Cable Clamp, Open, 1/2"	2
4	91-004008-00	8-32 x 1/4" T-Nut, 1/2" Flange	8
5	82-002008-08	#8 x 1/2" HWH Phillips SMS	2
6	82-000004-08	#4 x 1/2" PPH SMS	5
7	80-002008-10	8-32 x 5/8" HWH Phillips MS, Serrated	4
8	15-004127-17	GI LED PCB Assy, T/R LED FP, 7.5V, No Connector	5
9	30-000034-02	GI Light Rod, Acrylic, 1.34"	5

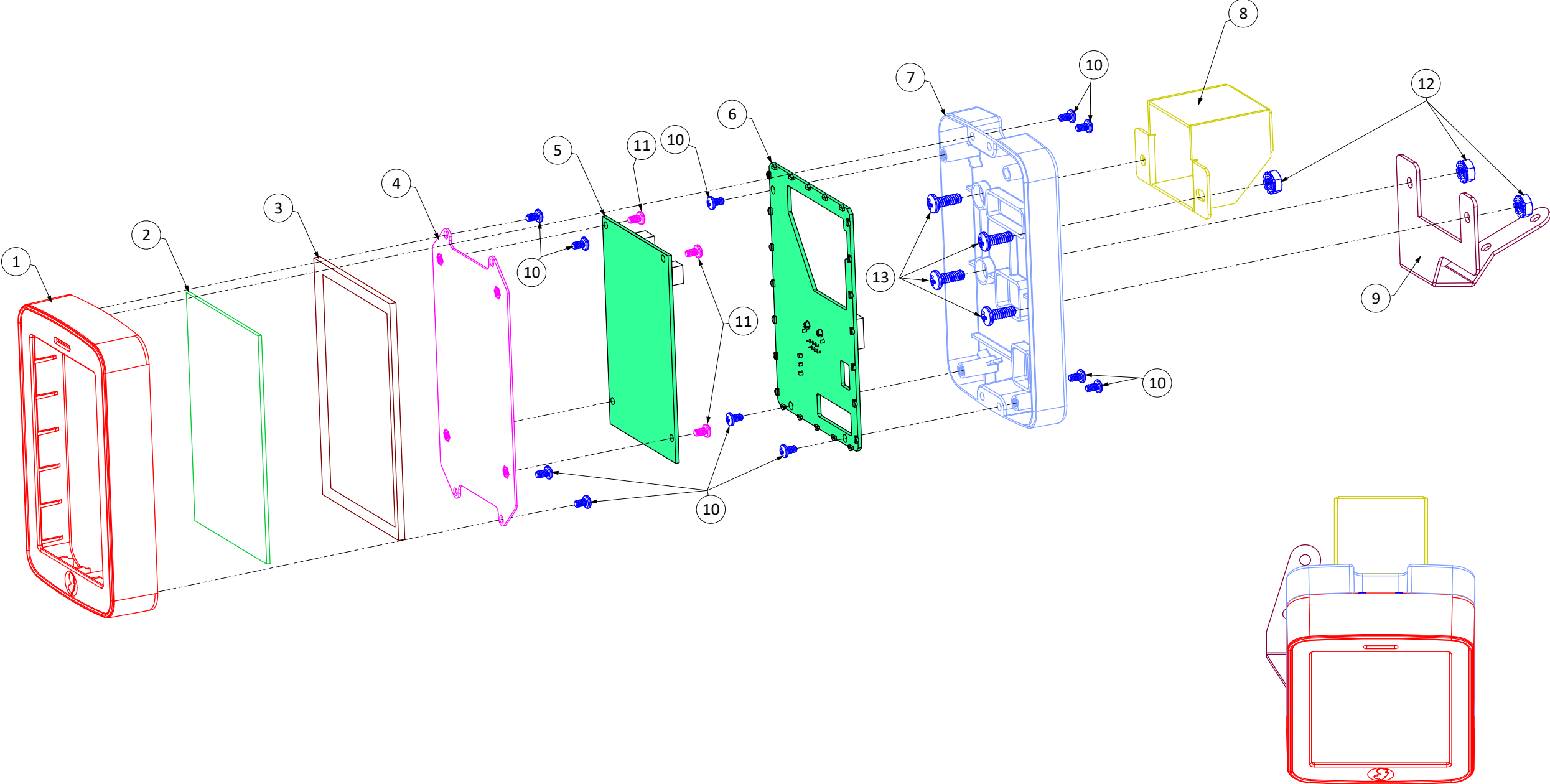






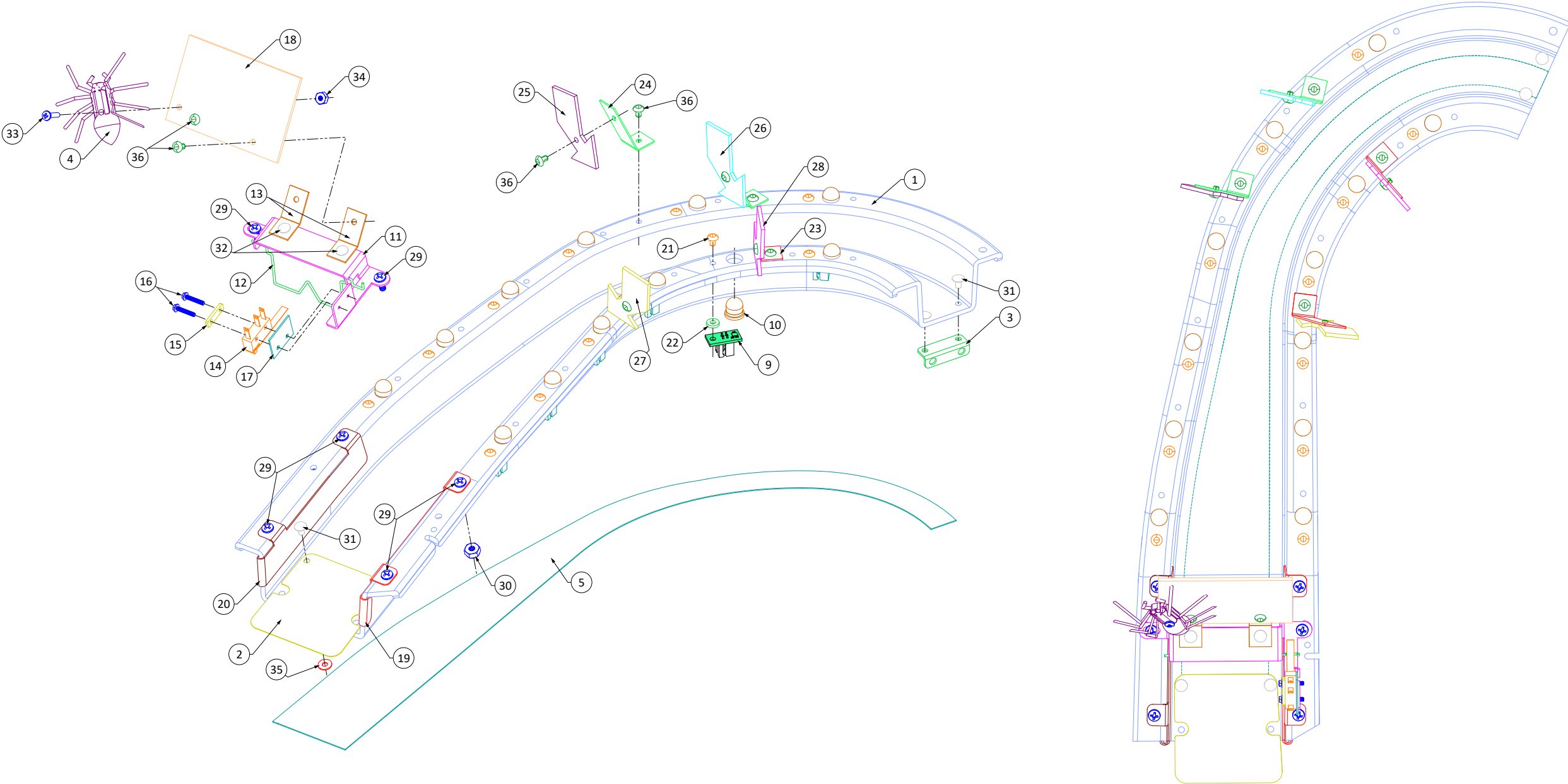
## DI Quantum Theater Assembly 52-000048-00

Item	Part Number	Description	Qty
1	10-000210-00	DI Quantum Theater Right Side	1
2	10-000210-01	DI Quantum Theater Left Side	1
3	10-000210-03	DI Quantum Theater Rear Support Brkt	1
4	10-000210-04	DI Quantum Theater LCD Screen Mtg Plate	1
5	17-000004-00	4.3" LCD Screen	1
6	80-000106-04	6-32 x1/4" PPH MS, Black	20
7	10-000193-01	4.3" LCD EMI Shield VGA Bulkhead Mtg Brkt	1
8	30-000111-00	DI Quantum Theater Mirror Reflector	1
9	10-000210-06	DI Quantum Theater EMI Shield	1
10	15-000038-00	4.3" LCD Driver Bd	1
11	91-000006-00	6-32 Nylon Stop Nut	2
12	10-000210-05	DI Quantum Theater Mirror Mtg Brkt	2
13	80-000404-03	4-40 x 3/16" PPH MS, Nylon	4
14	10-000210-02	DI Quantum Theater Front Support Brkt	1
15	10-000210-07	DI Quantum Theater Sign Mtg Brkt	1



## DI Smartphone Assembly 52-000049-00

Item	Part Number	Description	Qty
1	30-000085-00	DI Smartphone Front Housing	1
2	30-000085-02	DI Smartphone Front Cover	1
3	17-000004-00	4.3" LCD Screen	1
4	10-000212-01	DI Smartphone PCB Mtg Plate	1
5	15-000038-00	4.3" LCD Driver Bd	1
6	15-000042-00	DI Smartphone RGB LED Bd	1
7	30-000085-01	DI Smartphone Rear Housing	1
8	10-000212-02	DI Smartphone VGA Bulkhead Mtg Brkt	1
9	10-000212-00	DI Smartphone Mtg Brkt	1
10	80-000004-03	4-40 x 3/16" PPH MS	11
11	80-000404-03	4-40 x 3/16" PPH MS, Nylon	4
12	91-000008-00	8-32 Nylon Stop Nut	4
13	80-000008-06	8-32 x 3/8" PPH MS	4



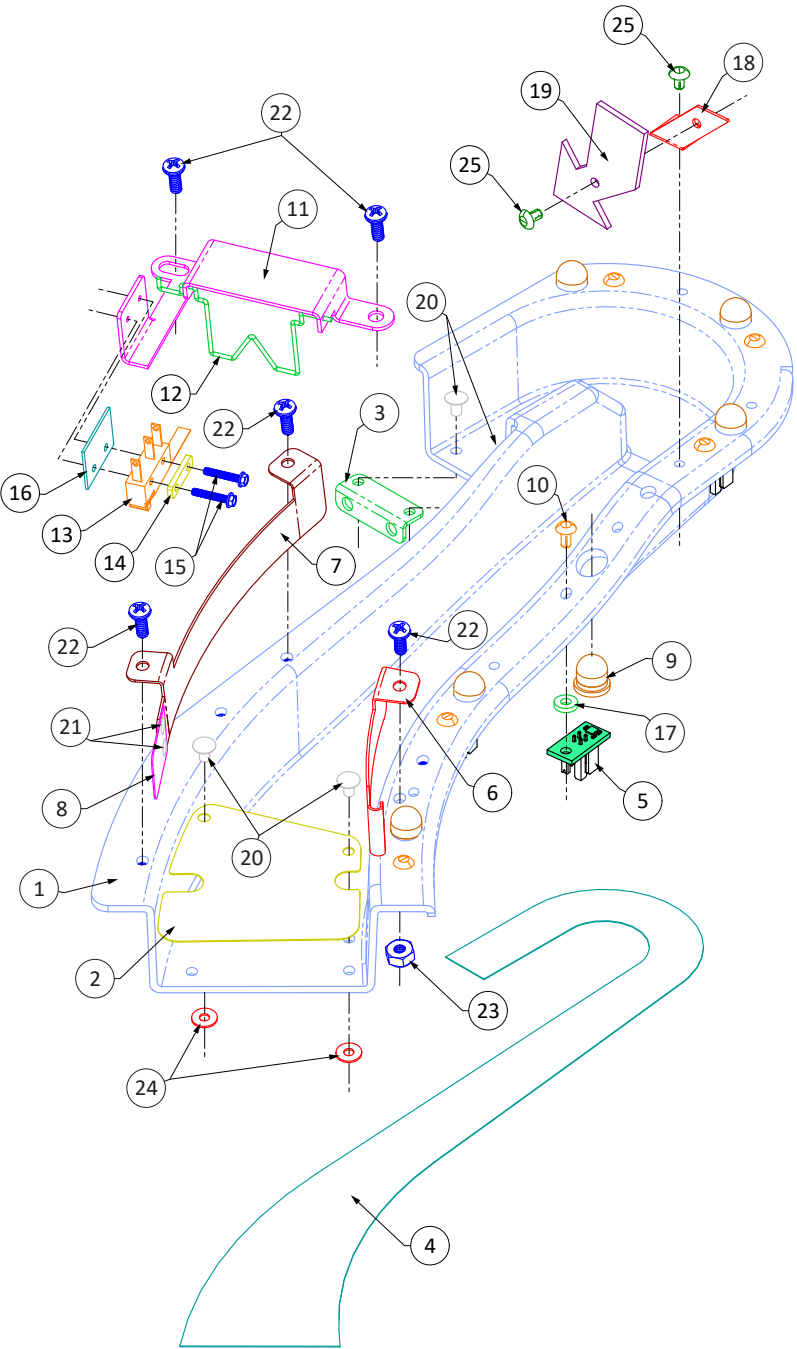
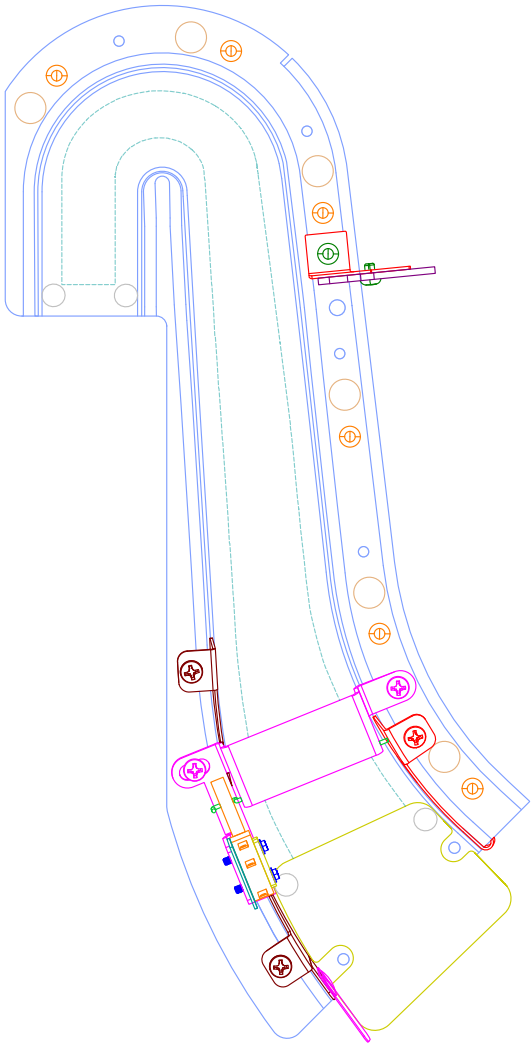


## DI Left Ramp Assemblies

### 52-000050-00 (LE), -10 (Std)

Item	Part Number	Description	Qty	Item	Part Number	Description	Qty
1	31-000004-00	DI Plastic Left Ramp (-00)	1	19	10-000229-00	DI Left Ramp Edge Protector, Right	1
or	31-000004-10	DI Plastic Left Ramp, Std (-10)	1	20	10-000229-01	DI Left Ramp Edge Protector, Left	1
2	11-006007-00	DI Left Ramp Flap	1	21*	30-000041-51	Push Rivet, Click-Lock, 0.118-0.158", White	12
3	10-000219-00	Wire Ramp End Mtg Brkt	1	22*	92-000605-10	Nylon Washer, 0.13" ID, 0.285" OD, 0.062" TH	12
4	25-007000-00	DI Rubber Spider Toy	1	23	10-000227-10	Playfield Sign Mtg Brkt, Angled, Right Side	2
5	62-000029-01	DI Left Ramp/STATION 1 Decal	1	24	10-000227-11	Playfield Sign Mtg Brkt, Angled, Left Side	2
6	19-009032-02	DI Left Ramp Entrance Switch Cable	1	25	30-003008-05	DI Ramp Arrow/DANGER Plastic	1
7	19-009030-50	DI Left Ramp, Left Side RGB LED Cable	1	26	30-003008-07	DI Ramp Arrow/HIGH VOLTAGE PHOTON CABLE Plastic	1
8	19-009030-52	DI Left Ramp, Right Side/PF Sign RGB LED Cable	1	27	30-003008-09	DI Ramp Arrow/KEEP CLEAR Plastic	1
9*	15-004151-04	RGB GI PCB Assy, T LED FP, 4V	12	28	30-003008-10	DI Ramp Arrow/HIGH VOLTAGE Plastic	1
10*	30-000034-03	Mini Light Rod, Acrylic, 0.44"	12	29	80-000006-06	6-32 x 3/8" PPH MS	6
11	10-000150-21	Microswitch Gate Brkt, Sign Mtg	1	30	91-000006-00	6-32 Nylon Stop Nut	6
12	13-003029-00	Microswitch Gate Wireform	1	31	93-000000-00	1/8" x 7/32" Semi-Tubular Rivet, TH	4
13	10-000227-00	Playfield Sign Mtg Brkt, 45°	2	32	93-000003-00	1/8" x 5/32" Semi-Tubular Rivet, TH	2
14	18-003011-00	Ramp Entrance Microswitch & Blade	1	33	80-000104-08	4-40 x 1/2" PPH MS, Black	1
15	10-000024-01	Microswitch Protector Plate, #2	1	34	91-000004-00	4-40 Nylon Stop Nut	1
16	80-002102-08	2-56 x 1/2" HWH MS, Black	2	35	92-000004-00	#4 Flat Washer	2
17	70-009002-00	Microswitch Insulator, Fish Paper	1	36	30-000041-01	Push Rivet, Click-Lock, 0.118-0.158", Black	10
18	30-003008-21	DI SHOOT RAMPS TO RIDE TRAIN Sign Plastic	1				

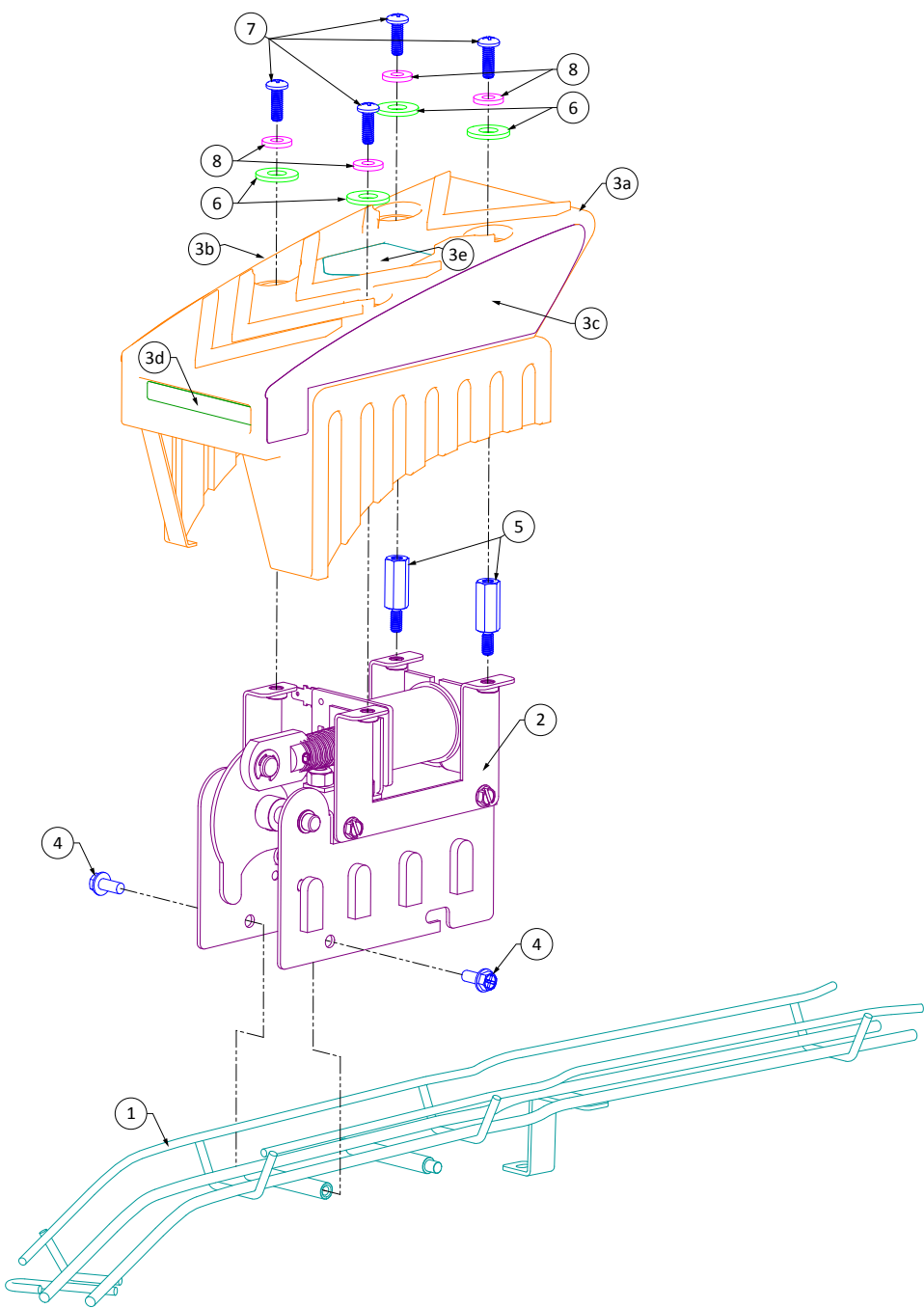
\* Used on Left Ramp of Dialed In LE and CE games only.



## DI Upper Left Ramp Assemblies 52-000051-00 (LE), -10 (Std)

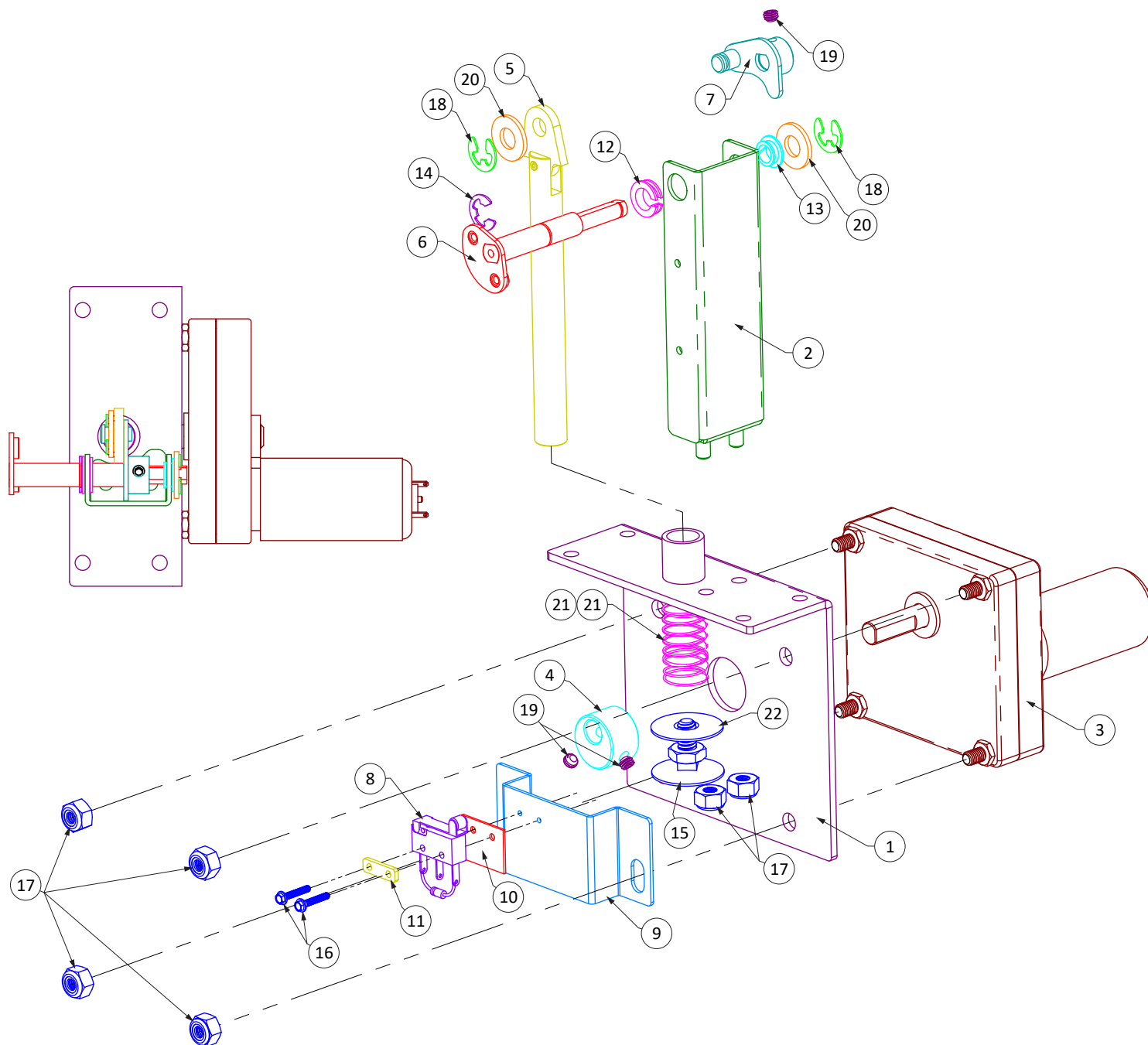
Item	Part Number	Description	Qty	Item	Part Number	Description	Qty
1	31-000005-00	DI Plastic Upper Left Ramp (-00)	1	13	18-003011-00	Ramp Entrance Microswitch & Blade	1
or	31-000005-10	DI Plastic Upper Left Ramp, Std (-10)	1	14	10-000024-01	Microswitch Protector Plate, #2	1
2	11-006008-00	DI Upper Left Ramp Flap	1	15	80-002102-08	2-56 x 1/2" HWH MS, Black	2
3	10-000219-00	Wire Ramp End Mtg Brkt	1	16	70-009002-00	Microswitch Insulator, Fish Paper	1
4	62-000029-02	DI Upper Left Ramp/STATION 3 Decal	1	17*	92-000605-10	Nylon Washer, 0.13" ID, 0.285" OD, 0.062" TH	6
5*	15-004151-04	RGB GI PCB Assy, T LED FP, 4V	6	18	10-000227-10	Playfield Sign Mtg Brkt, Angled, Right Side	1
6	10-000229-10	DI Upper Left Ramp Edge Protector, Right	1	19	30-003008-08	DI Ramp Arrow/DANGER HIGH ENERGY Plastic	1
7	10-000229-11	DI Upper Left Ramp Edge Protector, Left	1	20	93-000000-00	1/8" x 7/32" Semi-Tubular Rivet, TH	4
8	11-006013-00	DI Upper Left Ramp Left Side Transition Flap	1	21	93-000003-00	1/8" x 5/32" Semi-Tubular Rivet, TH	2
9*	30-000034-03	Mini Light Rod, Acrylic, 0.44"	6	22	80-000006-06	6-32 x 3/8" PPH MS	5
10*	30-000041-52	Push Rivet, Click-Lock, 0.157-0.197", White	6	23	91-000006-00	6-32 Nylon Stop Nut	5
11	10-000150-20	Microswitch Gate Brkt	1	24	92-000004-00	#4 Flat Washer	2
12	13-003029-01	Microswitch Gate Wireform, Narrow	1	25	30-000041-01	Push Rivet, Click-Lock, 0.118-0.158", Black	2

\* Used on Upper Left Ramp of Dialed In LE and CE games only.



DI 3-Ball Lock Ramp Assembly  
52-000054-00

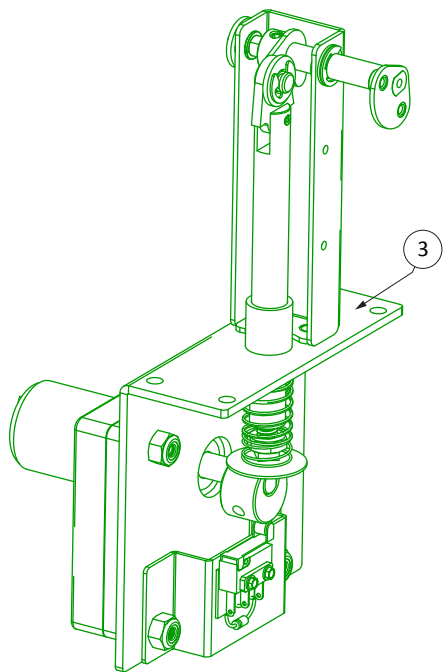
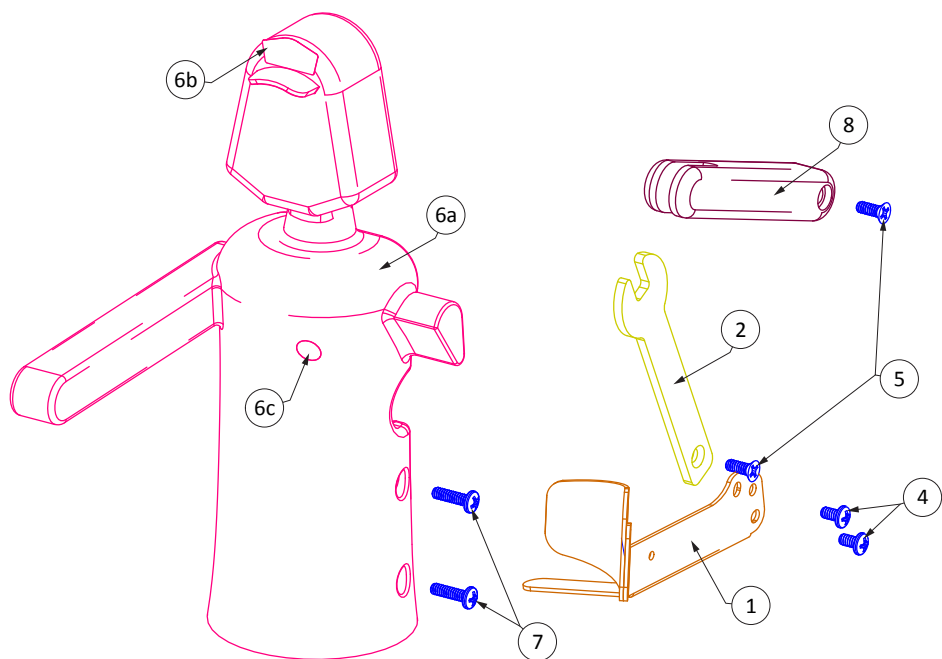
Item	Part Number	Description	Qty
1	13-000012-00	DI 3-Ball Lock Wire Ramp	1
2	51-000084-00	3-Ball Lock Assy	1
3	52-000067-10	DI STATION 3 Sculpture w/Decals Assy	1
a)	32-000041-01	DI STATION 3 Building Sculpture, 2/17	1
b)	62-000033-02	DI STATION 3 Decal, Left Side	1
c)	62-000033-03	DI STATION 3 Decal, Right Side	1
d)	62-000033-04	DI STATION 3 Decal, Front	1
e)	62-000033-05	DI STATION 3 Decal, Top	1
4	80-002008-06	8-32 x 3/8" HWH Phillips MS, Serrated	2
5	95-001518-12	5/16" x 3/4" Hex Spacer, M-F, 8-32, Alum	2
6	92-000125-00	1/4" Flat Washer, 0.281" ID, 0.625" OD, 0.05" TH, Black	4
7	80-000108-08	8-32 x 1/2" PPH MS, Black	4
8	92-000108-00	#8 Flat Washer, Black	4



## DI Robot Assembly 52-000056-00

Item	Part Number	Description	Qty
1	10-000220-02	Robot Motor Mtg Plate	1
2	10-000220-00	Robot Bearing Brkt	1
3	23-005009-00	Gear Motor Assy, 12VDC, 8rpm	1
4	11-000045-03	Robot Cam	1
5	11-005014-20	Robot Cam Shaft & Link Assy	1
6	11-005014-00	Robot Arm Shaft Weldment	1
7	11-005014-10	Robot Arm Collar & Linkage Weldment	1
8	18-003005-00	Microswitch w/Roller Actuator	1
9	10-000220-06	Robot Switch Mtg Brkt	1
10	70-009002-00	Microswitch Insulator, Fish Paper	1
11	10-000024-01	Microswitch Protector Plate, #2	1
12	30-000071-05	5L1-FF Snap-In Nyliner	1
13	30-000071-00	4L1-FF Snap-In Nyliner	1
14	94-004011-10	5/16" Shaft E-Clip	1
15	84-001025-24	1/4-20 x 3/4" Elevator Bolt, 0.97" Head	1
16	80-002102-08	2-56 x 1/2" HWH MS, Black	2
17	91-000010-00	10-32 Nylon Stop Nut	6
18	94-004011-08	1/4" Shaft E-Clip	2
19	85-004010-02	10-32 x 1/8" Set Screw, Cup Point	3
20	92-000025-00	1/4" Flat Washer, 0.219" ID, 0.5" OD	2
21	13-007002-00	Pop Bumper Plunger Return Spring	2
22	92-000025-02	1/4" Flat Washer, 0.266" ID, 0.875" OD, 0.05" TH	1



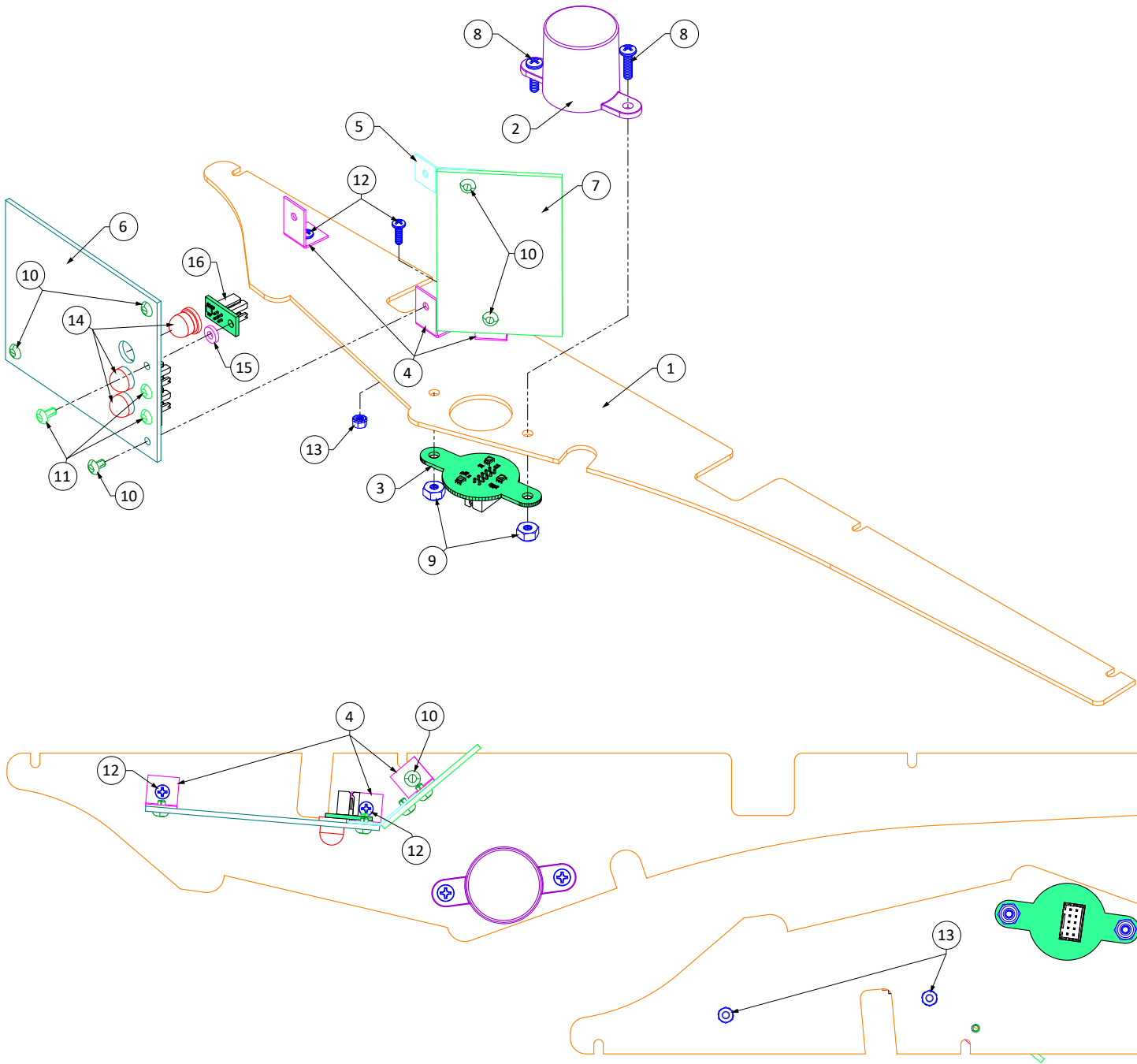


DI Robot & Betty Sculpture Assembly  
52-000056-10

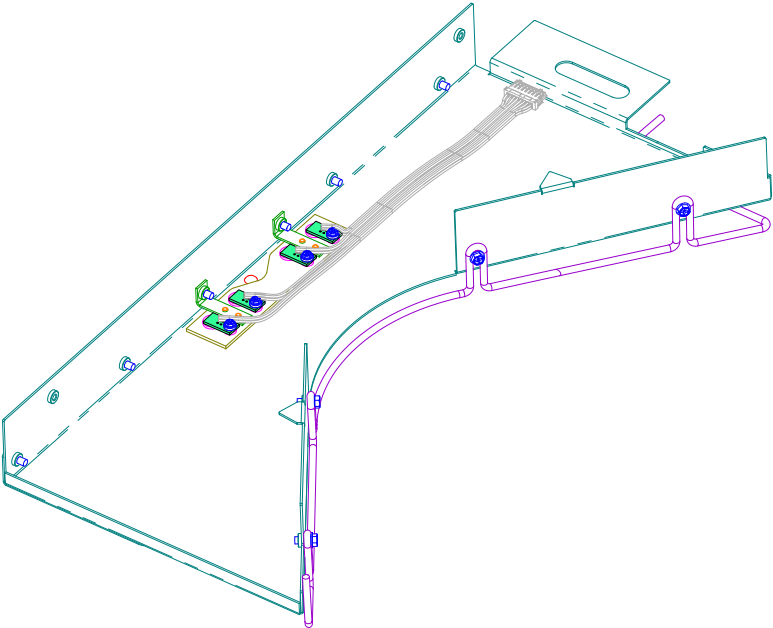
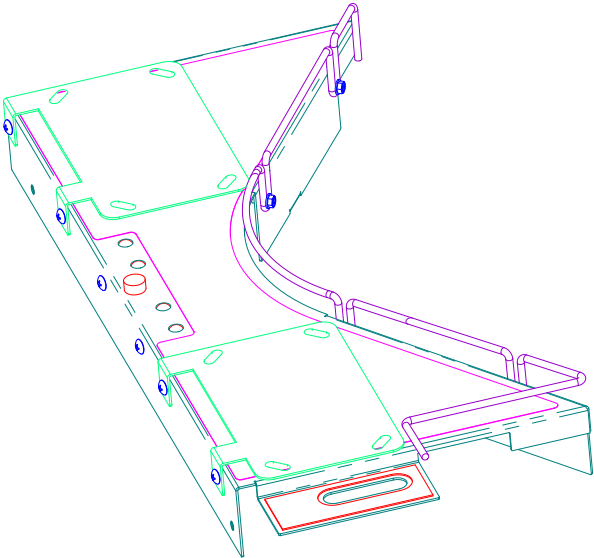
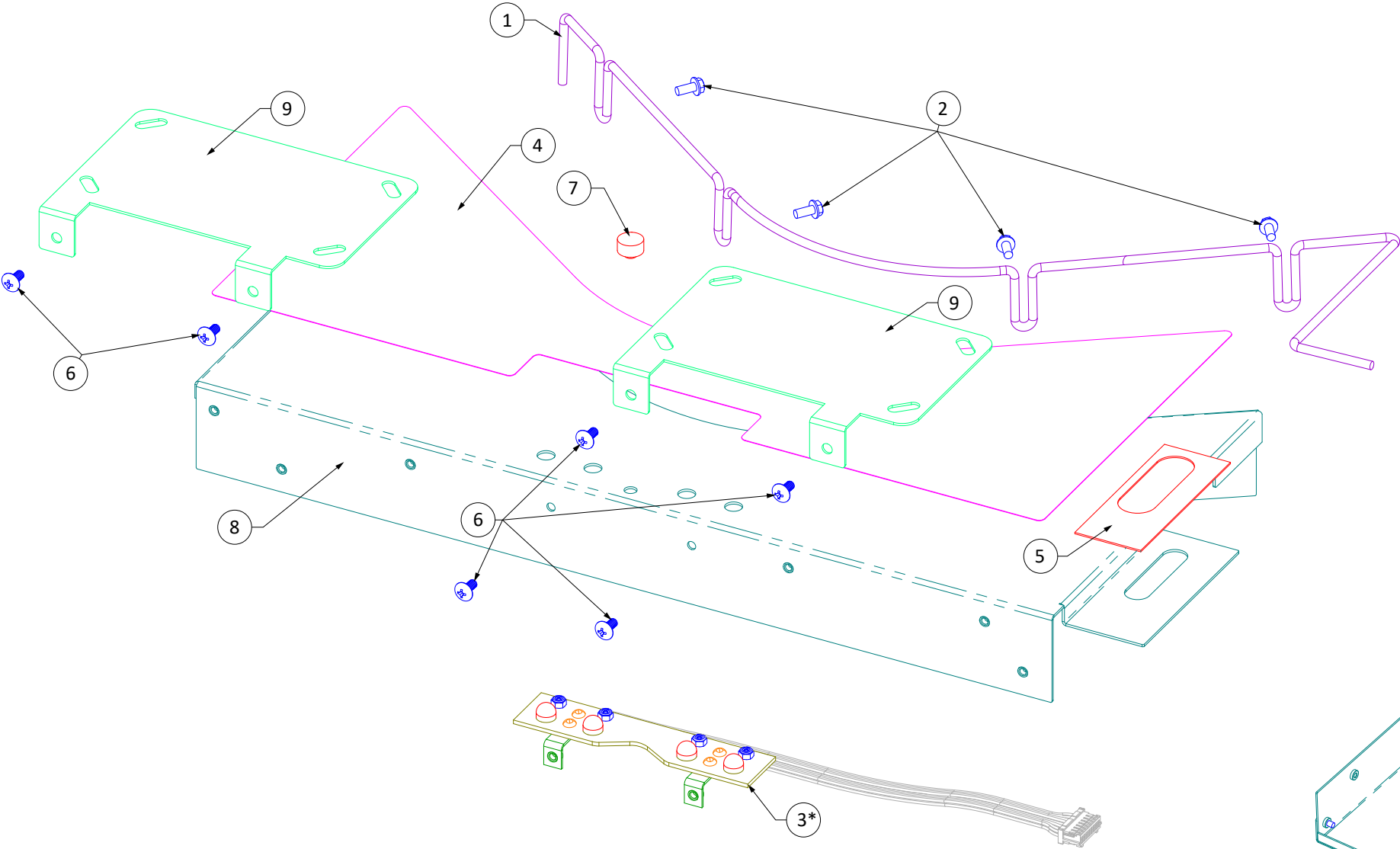
Item	Part Number	Description	Qty
1	10-005039-00	Robot Diverter Arm Weldment	1
2	30-000116-10	DI Robot Betty Figure Wrench	1
3	52-000056-00	DI Robot Assy	1
4	80-000106-04	6-32 x 1/4" PPH MS, Black	2
5	80-006106-06	6-32 x 3/8" PFH MS, Black	2
6	52-000067-00	DI Betty Sculpture w/Decals Assy	1
a)	32-000042-00	DI Robot Betty Sculpture, Body	1
b)	62-000027-04	DI Betty Quantum Mechanics Hat Decal	1
c)	62-000027-03	DI Betty Lapel Decal	1
7	82-000006-08	#6 x 1/2" PPH SMS	2
8	32-000042-01	DI Robot Betty Sculpture, Left Arm	1

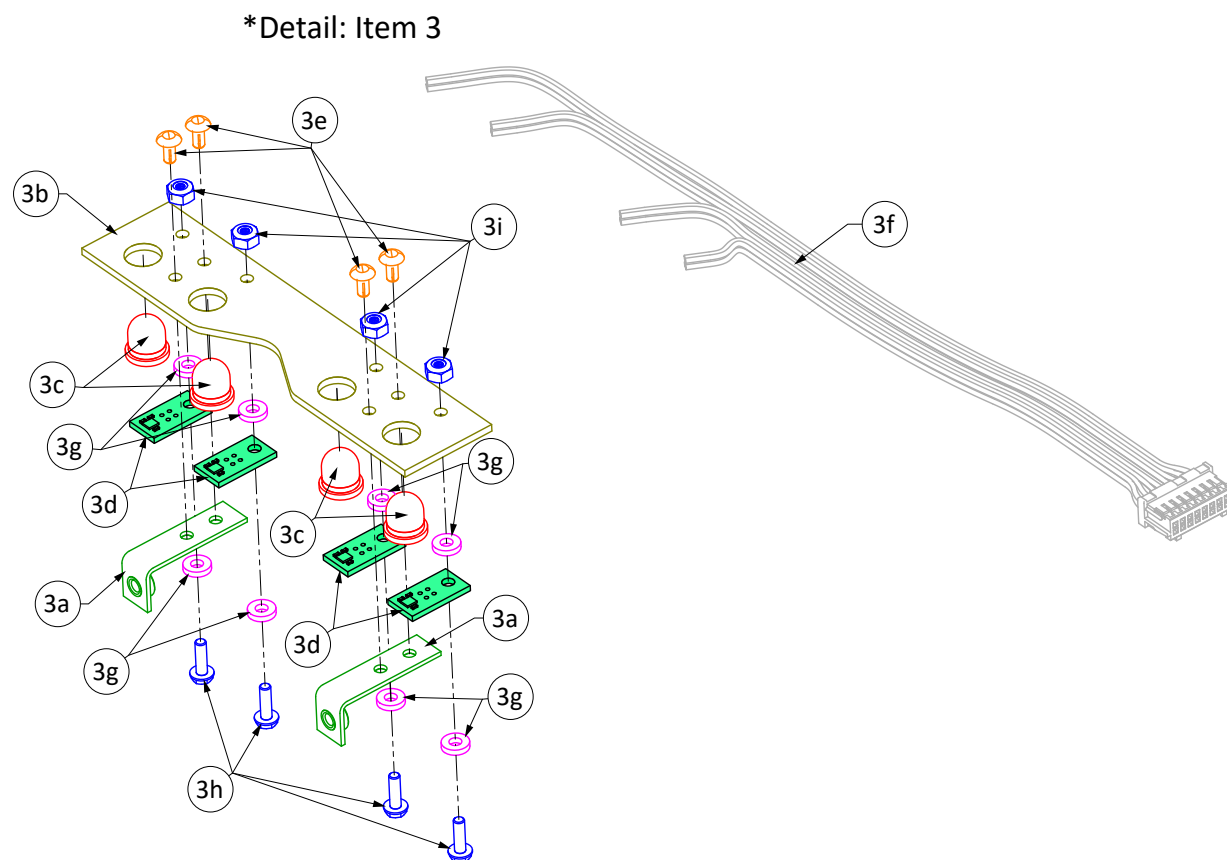
# DI Left Side Playfield Plastic Assembly

## 52-000059-00



Item	Part Number	Description	Qty
1	30-003008-13	DI Left Side/Lightning/Crazy Bob's Plastic	1
2	30-000089-13	Flasher Dome w/Tabs, Clear	1
3	15-004063-04	RGB Beacon Flasher PCB Assy, T LED FP, 4V	1
4	10-000227-01	Playfield Sign Mtg Brkt, 90°	3
5	10-000227-00	Playfield Sign Mtg Brkt, 45°	1
6	30-003008-20	DI Visit BOB'S When FLASHING Sign Plastic	1
7	30-003008-34	DI Crazy Bob's Sign Plastic	1
8	80-000006-08	6-32 x 1/2" PPH MS	2
9	91-000006-00	6-32 Nylon Stop Nut	2
10	30-000041-01	Push Rivet, Click-Lock, 0.118-0.158", Black	6
11	30-000041-52	Push Rivet, Click-Lock, 0.157-0.197", White	3
12	80-000004-04	4-40 x 1/4" PPH MS	2
13	91-001004-00	4-40 Keps Nut	2
14	30-000034-03	Mini Light Rod, Acrylic, 0.44"	3
15	92-000605-10	Nylon Washer, 0.13" ID, 0.285" OD, 0.062" TH	3
16	15-004151-04	RGB GI PCB Assy, T LED FP, 4V	3

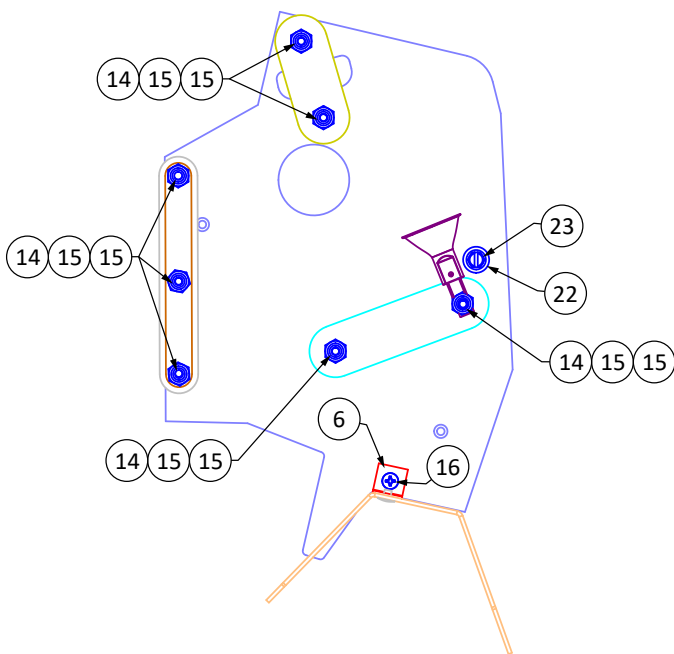
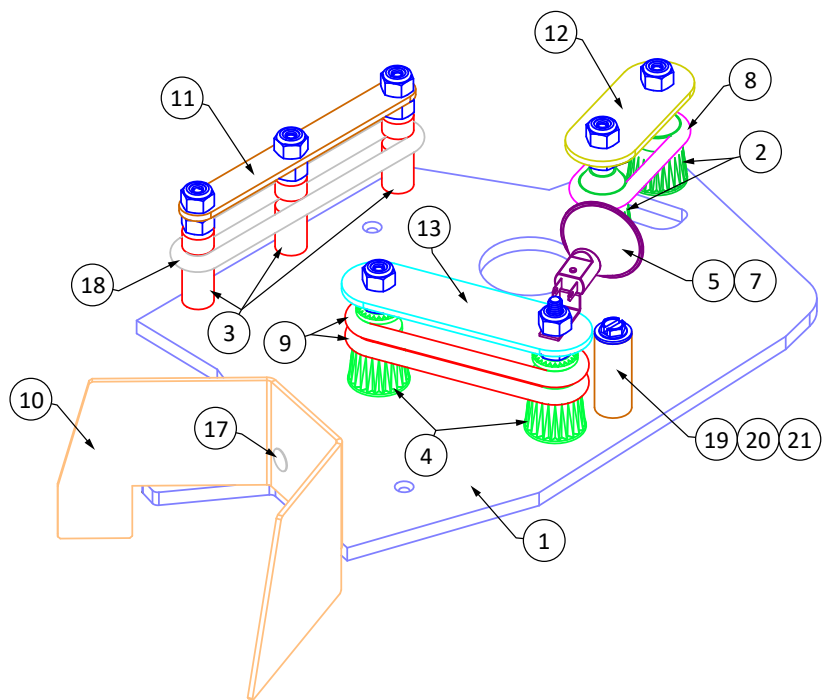




## DI Bottom Arch Assemblies

### 52-000060-00 (Std), -06 (LE), -07 (CE)

Item	Part Number	Description	Qty
1	13-000014-00	DI Bottom Arch Wire Rail	1
2	80-002008-08	8-32 x 1/2" HWH Phillips MS, Serrated	4
3	52-000061-00	DI Bottom Arch Light Holder Assy	1
a)	10-000228-00	Bottom Arch Light Holder Mtg Brkt	2
b)	30-003008-17	DI Bottom Arch Lights Mtg Clear Plastic	1
c)	30-000034-03	Mini Light Rod, Acrylic, 0.44"	4
d)	15-000051-02	RGB GI Bd, No Connector	4
e)	30-000041-01	Push Rivet, Click-Lock, 0.118-0.158", Black	4
f)	19-009030-05	DI Bottom Arch RGB LED Cable	1
g)	92-000605-10	Nylon Washer, 0.13" ID, 0.285" OD, 0.062" TH	8
h)	80-002104-06	4-40 x 3/8" HWH MS, Black	4
i)	91-000004-00	4-40 Nylon Stop Nut	4
4	62-000030-00	DI Bottom Arch Decal	1
5	62-000030-01	DI Shooter Gauge Decal	1
6	80-007008-06	8-32 x 3/8" Phillips TH MS	6
7	25-009014-00	Bottom Arch Rubber Plug	1
8 CE	10-000217-07	DI Bottom Arch, DI Purple (-07)	1
LE	10-000217-06	DI Bottom Arch, DI Blue (-06)	1
Std	10-000217-00	DI Bottom Arch, Black (-00)	1
9 CE	10-000217-17	DI Bottom Arch Card Holder Brkt, DI Purple (-07)	2
LE	10-000217-16	DI Bottom Arch Card Holder Brkt, DI Blue (-06)	2
Std	10-000217-10	DI Bottom Arch Card Holder Brkt, Black (-00)	2

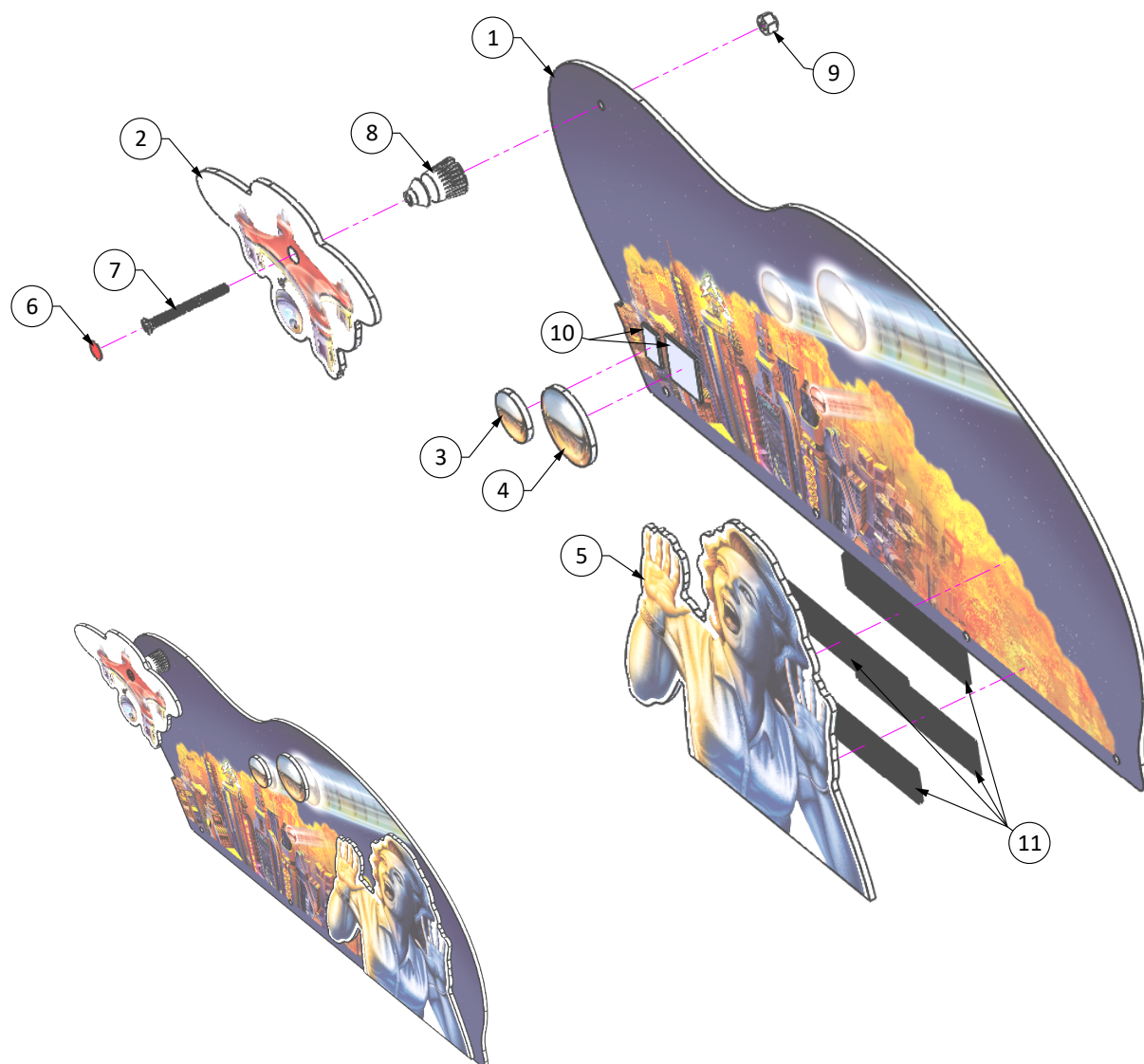


DI Mini Playfield Assembly  
52-000062-00

Item	Part Number	Description	Qty
1	30-004000-00	DI Mini Playfield, Clear, Lexan	1
2	30-009005-13	Single Star Poly Post, Clear	2
3	30-009004-13	1-1/16" Standard Poly Post, Clear	3
4	30-009008-13	Double Star Poly Post, Clear	2
5	30-000047-01	Spotlight Assy, Black, 20"	1
6	10-000227-01	Playfield Sign Mtg Brkt, 90°	1
7	24-000006-13	Wedge Base LED, 12V, 4-Chip, Cool White	1
8	25-002004-16-9	Silicone Ring, 1", White	1
9	25-002004-20-9	Silicone Ring, 1-1/4", White	2
10	30-004001-00	DI Smartphone Shield, Clear, Polycarbonate	1
11	30-003008-22	DI Mini PF/Long Train Plastic	1
12	30-003008-14	DI Mini PF/Sparks Plastic	1

Item	Part Number	Description	Qty
13	30-003008-04	DI Mini PF/Short Train Plastic	1
14	80-006008-28	8-32 x 1-3/4" PFH MS	7
15	91-000008-00	8-32 Nylon Stop Nut	14
16	83-000006-04	6-32 x 1/4" PPH Screw, Type 25 Thread Cutter	1
17	30-000041-01	Push Rivet, Click-Lock, 0.118-0.158", Black	1
18	25-002004-24-9	Silicone Ring, 1-1/2", White	1
19	80-006006-06	6-32 x 3/8" PFH MS	1
20	94-001406-16	1/4" x 1" Hex Spacer, F-F, 6-32, Zinc	1
21	25-006012-09	Post Polyurethane Sleeve, 1-1/16", White	1
22	92-000006-00	#6 Flat Washer, 0.141" ID, 0.437" OD	1
23	80-002006-06	6-32 x 3/8" HWH Phillips MS, Serrated	1





## DI Topper Printed Plastic Assembly 52-000070-10

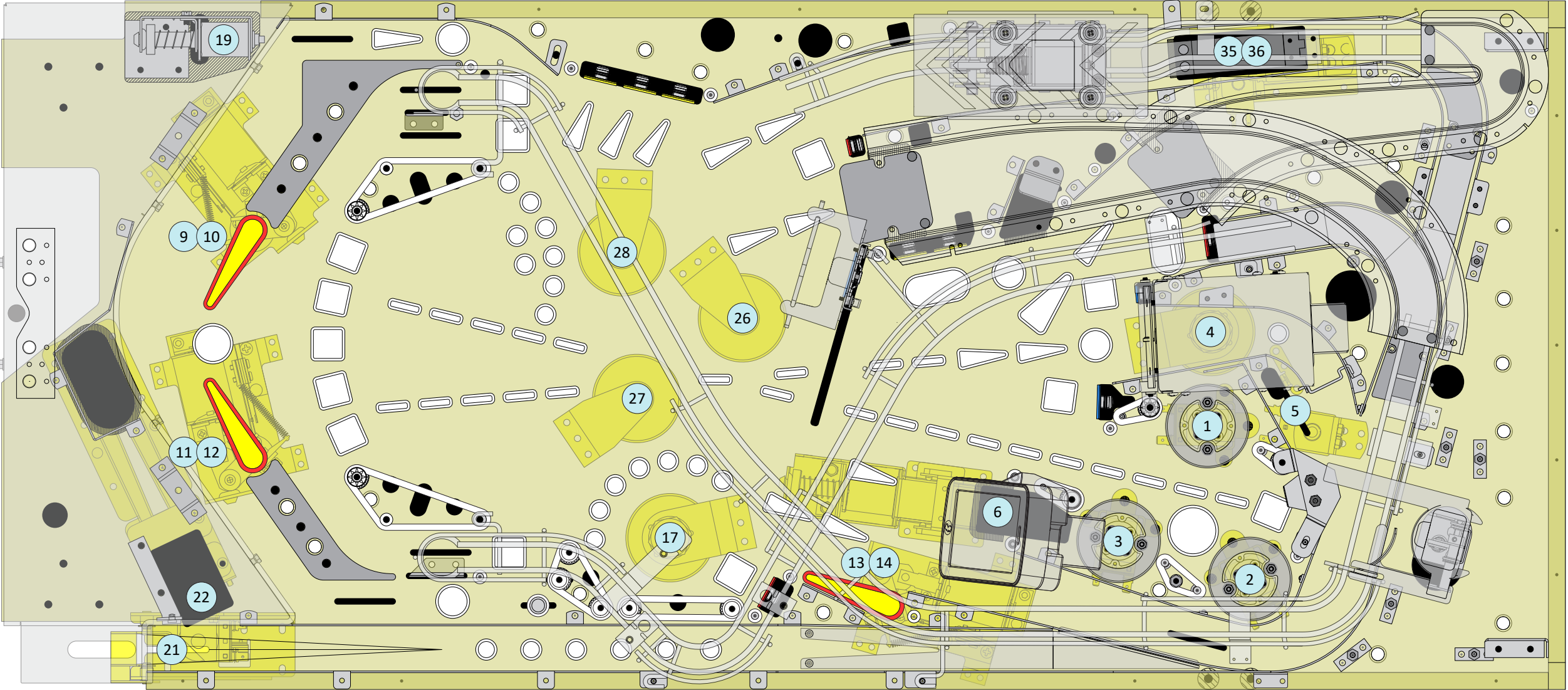
Item	Part Number	Description	Qty
1	30-003012-00	DI Topper Background Plastic, 3/17	1
2	30-003011-02	DI Topper Hovering Drone Plastic	1
3	30-003011-03	DI Topper Small Pinball Plastic	1
4	30-003011-04	DI Topper Large Pinball Plastic	1
5	30-003011-01	DI Topper Screaming Woman Plastic	1
6	62-000027-06	DI Topper Screw Head Cover Decal	1
7	80-006008-28	8-32 x 1-3/4" PFH MS	1
8	30-009005-13	Single Star Poly Post, Clear	1
9	91-000008-00	8-32 Nylon Stop Nut	1
10	61-009008-00	VHB Adhesive Tape, Two-Sided, 1"	1.5"
11	61-009009-00	Heavy Duty Foam Tape, Two-Sided, 3/4", Black	8"

Coil, Motor & Light Table (1 of 2)

Drive #	Coil Function	Coil Type	I/O Bd Power Source	I/O Bd Drive Details	Fuses	Part Number	Part of Assembly	Drawing
1	Left Pop Bumper	26-1200	BRN, J104-1, 70V	BRN-BLK, J104-9, Q308	F701, F704	23-000010-00	51-000004-01	C-19
2	Right Pop Bumper	26-1200	BRN, J104-1, 70V	BRN-GRY, J104-8, Q307	F701, F704	23-000010-00	51-000004-01	C-19
3	Lower Pop Bumper	26-1200	BRN, J104-1, 70V	BRN-RED, J104-7, Q306	F701, F704	23-000010-00	51-000004-01	C-19
4	Theater Magnet	22-675, Magnet	BRN, J104-1, 70V	BRN-ORN, J104-6, Q305	F701, F704	23-004005-00	51-000024-00	C-24
5	Skill Shot Kicker	26-1200	BRN, J104-1, 70V	BRN-YEL, J104-5, Q304	F701, F704	23-000010-00	51-000086-00	C-39
6	Smartphone Scoop Eject	23-800	BRN, J104-1, 70V	BRN-GRN, J104-4, Q303	F701, F704	23-000003-00	51-000083-00	C-37
7	Knocker (in backbox)	23-800	BRN, J104-1, 70V	BRN-BLU, J104-3, Q302	F701, F704	23-000003-00	51-000032-01	C-26
8	Not Used	-	-	-	-	-	-	-
9	Left Flipper Power	FL-15411	RED, J105-1, 70V	RED-BLK, J105-10, Q318	F701, F705	23-002003-00	51-000002-00	C-14
10	Left Flipper Hold	FL-15411	RED, J105-1, 70V	RED-BRN, J105-8, Q317	F701, F705	23-002003-00	51-000002-00	C-14
11	Right Flipper Power	FL-15411	RED, J105-1, 70V	RED-GRY, J105-7, Q316	F701, F705	23-002003-00	51-000001-14	C-12
12	Right Flipper Hold	FL-15411	RED, J105-1, 70V	RED-ORN, J105-6, Q315	F701, F705	23-002003-00	51-000001-14	C-12
13	Upper Right Flipper Power	FL-15411	RED, J105-1, 70V	RED-YEL, J105-5, Q314	F701, F705	23-002003-00	51-000001-14	C-12
14	Upper Right Flipper Hold	FL-15411	RED, J105-1, 70V	RED-GRN, J105-4, Q313	F701, F705	23-002003-00	51-000001-14	C-12
15, 16	Not Used	-	-	-	-	-	-	-
17	Drone Magnet	22-675, Magnet	ORN, J106-1, 70V	ORN-BLK, J106-10, Q328	F701, F706	23-004005-00	51-000024-00	C-24
18	Not Used	-	-	-	-	-	-	-
19	Kickback	23-800	ORN, J106-1, 70V	ORN-RED, J106-7, Q326	F701, F706	23-000003-00	51-000025-00	C-21
20	Not Used	-	-	-	-	-	-	-
21	Ball Auto-Launch	23-800	ORN, J106-1, 70V	ORN-YEL, J106-5, Q324	F701, F706	23-000003-00	51-000026-00	C-22
22	5-Ball Trough VUK	26-1200	ORN, J106-1, 70V	ORN-GRN, J106-4, Q323	F701, F706	23-000010-00	52-000021-00	C-20
23-25	Not Used	-	-	-	-	-	-	-
26	Upper Magnet	22-675, Magnet	TAN, J107-1, 70V	TAN-BRN, J107-9, Q337	F702, F707	23-004005-00	51-000024-01	C-24
27	Right Magnet	22-675, Magnet	TAN, J107-1, 70V	TAN-RED, J107-8, Q336	F702, F707	23-004005-00	51-000024-01	C-24
28	Left Magnet	22-675, Magnet	TAN, J107-1, 70V	TAN-ORN, J107-6, Q335	F702, F707	23-004005-00	51-000024-01	C-24
29-34	Not Used	-	-	-	-	-	-	-
35	Bob Trap Door Latch Release	26-600, Mini	PNK, J108-1, 70V	PNK-RED, J108-8, Q406	F702, F708	23-003008-00	51-000082-00	C-34
36	Bob Trap Door Open	26-1500	PNK, J108-1, 70V	PNK-ORN, J108-7, Q405	F702, F708	23-000015-00	51-000082-00	C-34
37-40	Not Used	-	-	-	-	-	-	-
41	Moving Target Motor	Motor	YEL, J109-1, 12V	YEL-BLK, J109-2, Q411	F714, F709	23-005009-00	51-000081-00	C-30
42	Moving Target Relay	Relay	YEL, J109-1, 12V	YEL-BRN, J109-3, Q412	F714, F709	160-000000-0T	15-000009-00	D-108
43	Not Used	-	-	-	-	-	-	-

# Coil, Motor & Light Table (2 of 2)

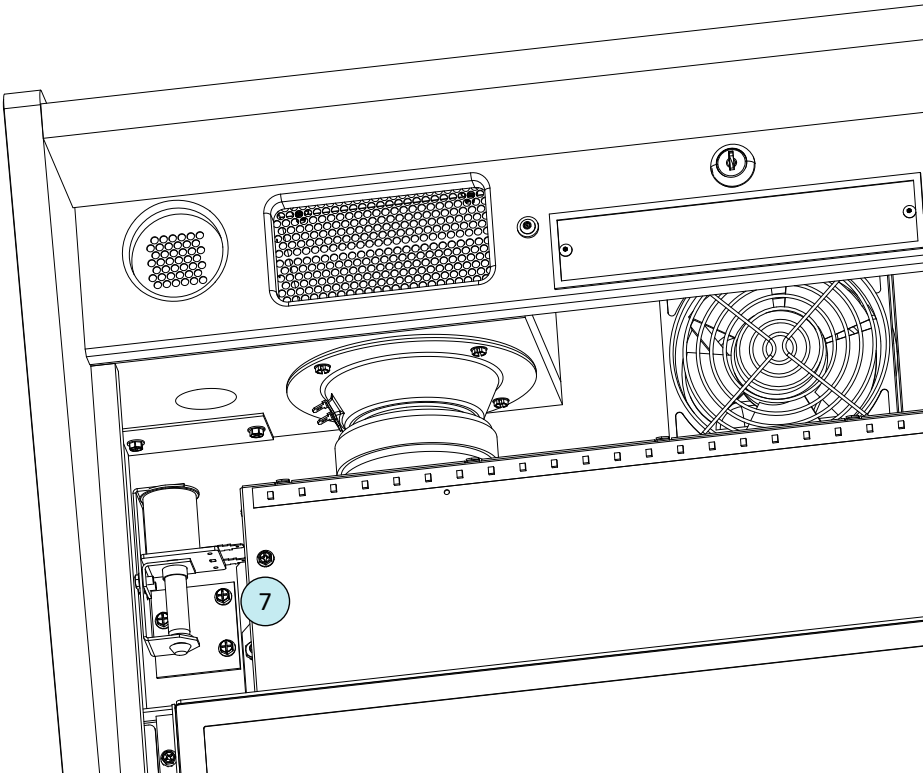
Drive #	Coil Function	Coil Type	I/O Bd Power Source	I/O Bd Drive Details	Fuses	Part Number	Part of Assembly	Drawing
44	Betty Spotlight	LED	YEL, J109-1, 12V	YEL-ORN, J109-6, Q414	F714, F709	24-000017-00	-	-
45	Betty Diverter Motor	Motor	YEL, J109-1, 12V	YEL-GRY, J109-7, Q415	F714, F709	23-005009-00	52-000056-00	C-59
46	Top Drone Motor	Motor	YEL, J109-1, 12V	YEL-GRN, J109-8, Q416	F714, F709	23-005010-00	13-002005-00	C-10
47	Center Drone Motor	Motor	YEL, J109-1, 12V	YEL-BLU, J109-9, Q417	F714, F709	23-005010-00	13-002005-00	C-10
48	Bottom Drone Motor	Motor	YEL, J109-1, 12V	YEL-VIO, J109-10, Q418	F714, F709	23-005010-00	13-002005-00	C-10
49-56	Not Used	-	-	-	-	-	-	-
57	STATION 3 Lock Release	26-1500	BLU, J111-1, 20V	BLU-BLK, J111-2, Q431	F703, F711	23-000015-00	51-000084-00	C-38
58	Left Slingshot	23-800	BLU, J111-1, 20V	BLU-BRN, J111-4, Q432	F703, F711	23-000003-00	51-000003-00	C-16
59	Right Slingshot	23-800	BLU, J111-1, 20V	BLU-RED, J111-5, Q433	F703, F711	23-000003-00	51-000003-00	C-16
60-72	Not Used	-	-	-	-	-	-	-
73	Shaker Motor	Motor	LT BLU, J113-2, 12V	LT BLU-GRY, J113-3, Q511	F714, F713	23-005003-01	51-005027-01	C-41
74	Topper Light (CE only)	LED Strip	LT BLU, J113-2, 12V	LT BLU-GRY, J113-3, Q511	F714, F713	24-000001-13	51-006010-00	C-4
75	Redemption Ticket Motor	Motor	LT BLU, J113-2, 12V	LT BLU-GRY, J113-5, Q513	F714, F713	-	-	-
76-78	Not Used	-	-	-	-	-	-	-
79	Start Button Light	LED	LT BLU, J113-2, 12V	LT BLU-GRY, J113-9, Q517	F714, F713	24-000017-00	18-007023-04	C-2
80	Flash Bulb Topper (Std only)	LED	LT BLU, J113-2, 12V	LT BLU-VIO, J113-10, Q518	F714, F713	15-004127-07	51-005048-00	C-48



# 70-Volt Coil Locations

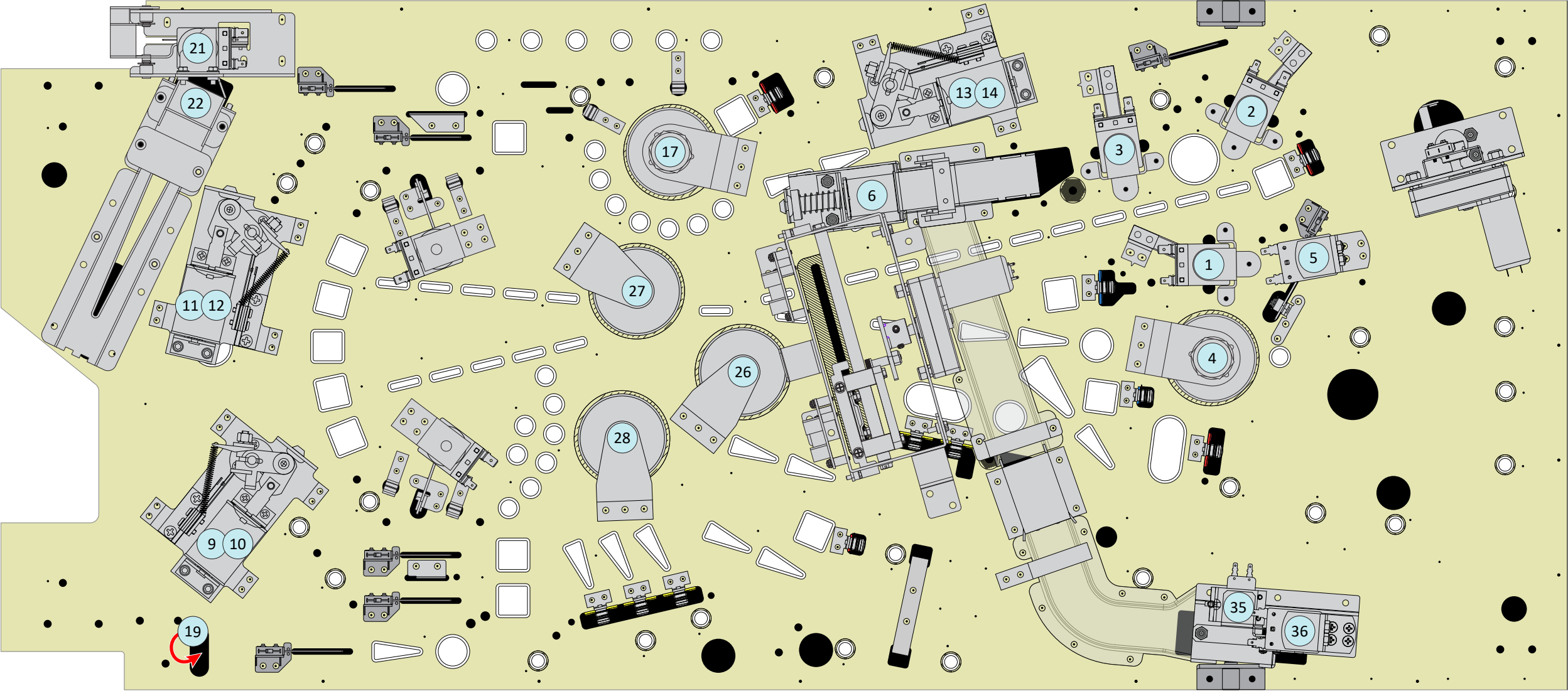
## Above Playfield

Drive	Coil Function	Part Number	Part of Assembly	Drawing
1	Left Pop Bumper	23-000010-00	51-000004-01	C-19
2	Right Pop Bumper	23-000010-00	51-000004-01	C-19
3	Lower Pop Bumper	23-000010-00	51-000004-01	C-19
4	Theater Magnet	23-004005-00	51-000024-00	C-24
5	Skill Shot Kicker	23-000010-00	51-000086-00	C-39
6	Phone Scoop Eject	23-000003-00	51-000083-00	C-37
7	Knocker (in backbox)	23-000003-00	51-000032-01	C-26
9	Left Flipper Power	23-002003-00	51-000002-00	C-14
10	Left Flipper Hold	23-002003-00	51-000002-00	C-14
11	Right Flipper Power	23-002003-00	51-000001-14	C-12
12	Right Flipper Hold	23-002003-00	51-000001-14	C-12
13	Upper Right Flipper Power	23-002003-00	51-000001-14	C-12
14	Upper Right Flipper Hold	23-002003-00	51-000001-14	C-12
17	Drone Magnet	23-004005-00	51-000024-00	C-24
19	Kickback	23-000003-00	51-000025-00	C-21
21	Ball Auto-Launch	23-000003-00	51-000026-00	C-22
22	5-Ball Trough VUK	23-000010-00	51-000021-00	C-20
26	Upper Magnet	23-004005-00	51-000024-01	C-24
27	Right Magnet	23-004005-00	51-000024-01	C-24
28	Left Magnet	23-004005-00	51-000024-01	C-24
35	Bob Trap Door Latch Release	23-003008-00	51-000082-00	C-34
36	Bob Trap Door Open	23-000015-00	51-000082-00	C-34



(70V coil wiring table on pg C-136)

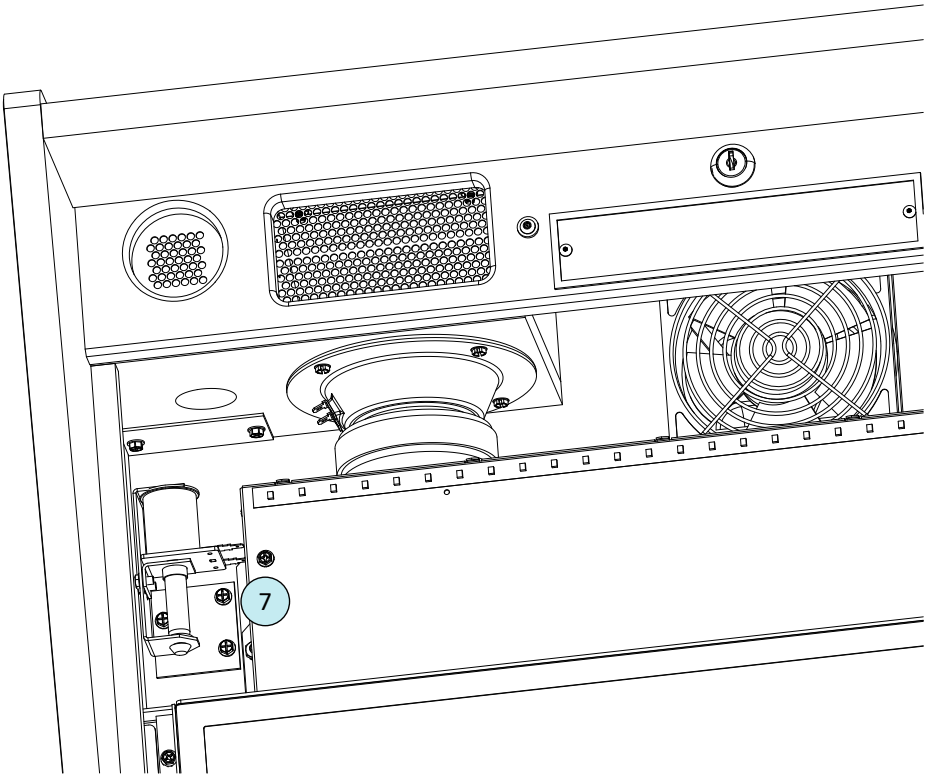




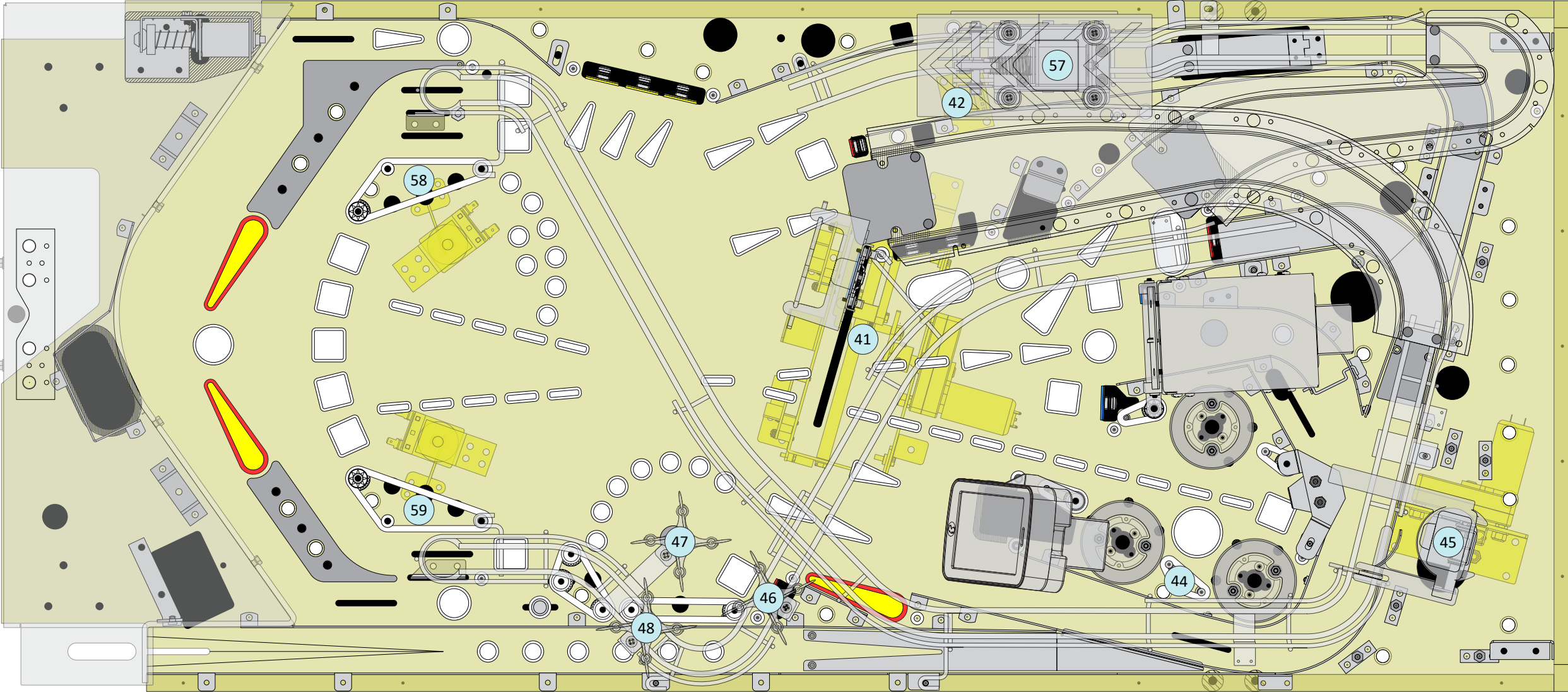
# 70-Volt Coil Locations

## *Under Playfield*

Drive	Coil Function	Part Number	Part of Assembly	Drawing
1	Left Pop Bumper	23-000010-00	51-000004-01	C-19
2	Right Pop Bumper	23-000010-00	51-000004-01	C-19
3	Lower Pop Bumper	23-000010-00	51-000004-01	C-19
4	Theater Magnet	23-004005-00	51-000024-00	C-24
5	Skill Shot Kicker	23-000010-00	51-000086-00	C-39
6	Phone Scoop Eject	23-000003-00	51-000083-00	C-37
7	Knocker (in backbox)	23-000003-00	51-000032-01	C-26
9	Left Flipper Power	23-002003-00	51-000002-00	C-14
10	Left Flipper Hold	23-002003-00	51-000002-00	C-14
11	Right Flipper Power	23-002003-00	51-000001-14	C-12
12	Right Flipper Hold	23-002003-00	51-000001-14	C-12
13	Upper Right Flipper Power	23-002003-00	51-000001-14	C-12
14	Upper Right Flipper Hold	23-002003-00	51-000001-14	C-12
17	Drone Magnet	23-004005-00	51-000024-00	C-24
19	Kickback	23-000003-00	51-000025-00	C-21
21	Ball Auto-Launch	23-000003-00	51-000026-00	C-22
22	5-Ball Trough VUK	23-000010-00	51-000021-00	C-20
26	Upper Magnet	23-004005-00	51-000024-01	C-24
27	Right Magnet	23-004005-00	51-000024-01	C-24
28	Left Magnet	23-004005-00	51-000024-01	C-24
35	Bob Trap Door Latch Release	23-003008-00	51-000082-00	C-34
36	Bob Trap Door Open	23-000015-00	51-000082-00	C-34



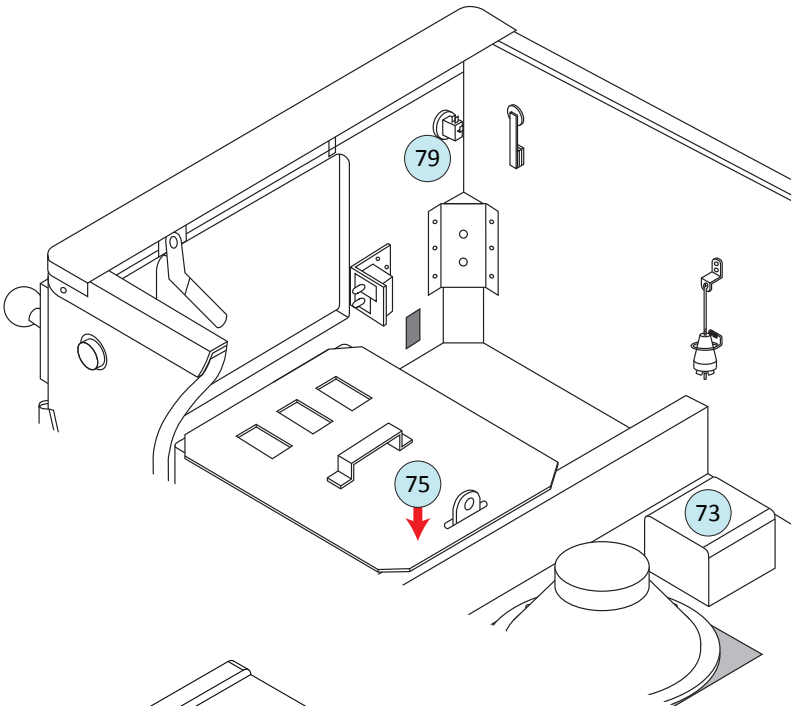
(70V coil wiring table on pg C-136)



# 20-Volt Coil Locations

## Above Playfield

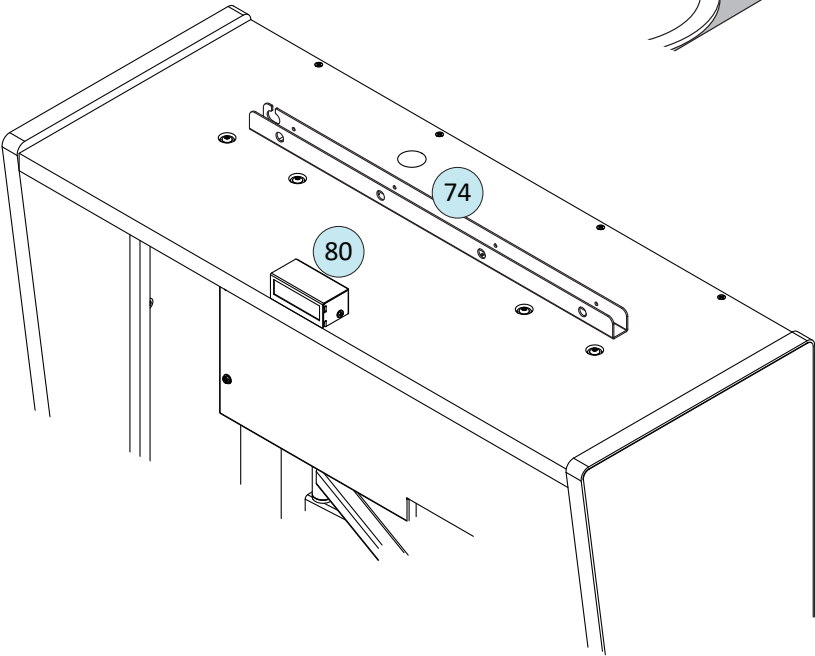
Drive	Function	Part Number	Part of Assembly	Drawing
57	STATION 3 Lock Release	23-000015-00	51-000084-00	C-38
58	Left Slingshot	23-000003-00	51-000003-00	C-16
59	Right Slingshot	23-000003-00	51-000003-00	C-16



# 12-Volt Motor & Light Locations

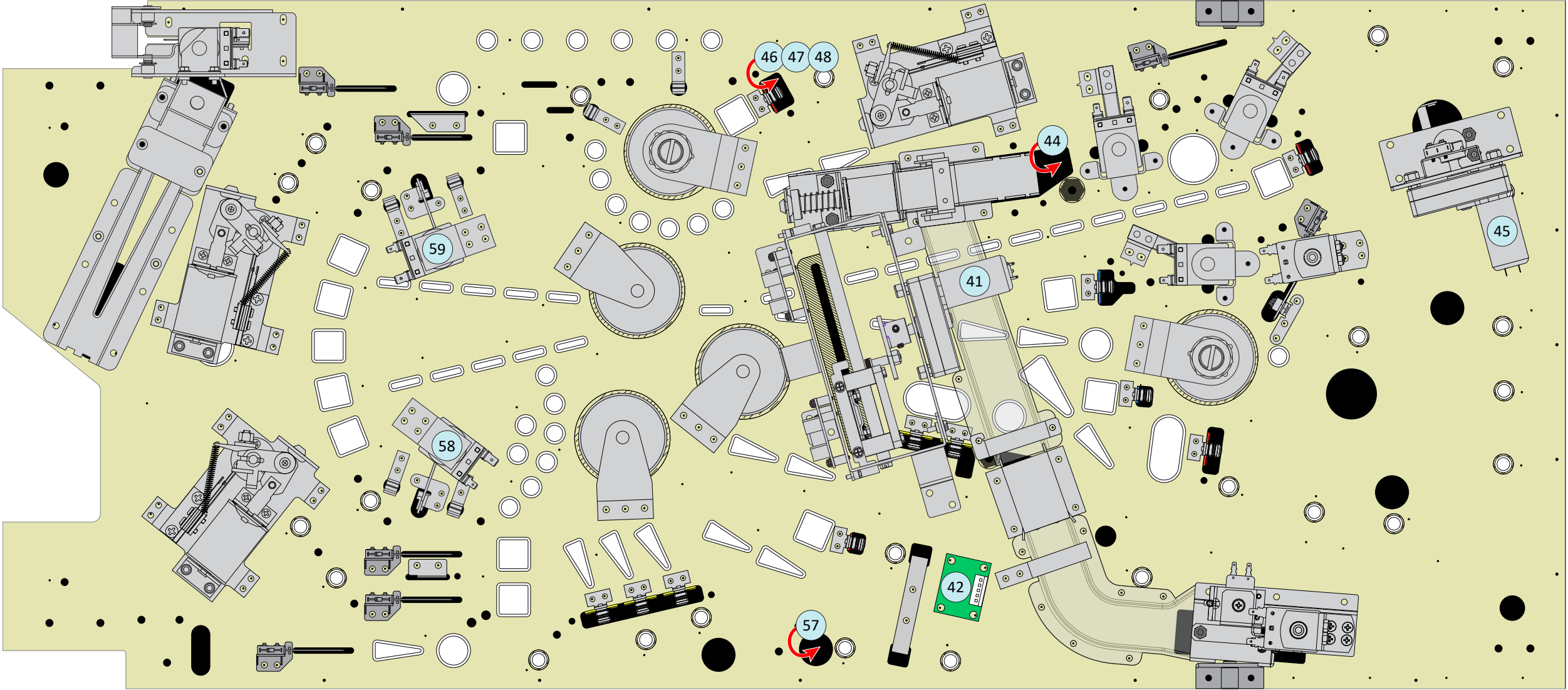
## Above Playfield

Drive	Function	Part Number	Part of Assembly	Drawing
41	Moving Target Motor	23-005009-00	51-000081-00	C-30
42	Moving Target Relay	160-000000-0T	15-000009-00	D-108
44	Betty Spotlight	24-000017-00	-	-
45	Betty Diverter Motor	23-005009-00	52-000056-00	C-59
46	Top Drone Motor	23-005010-00	13-002005-00	C-10
47	Center Drone Motor	23-005010-00	13-002005-00	C-10
48	Bottom Drone Motor	23-005010-00	13-002005-00	C-10
73	Shaker Motor	23-005003-00	51-005027-01	C-41
74 CE	Topper Light (top of backbox)	24-000001-13	51-006010-00	C-4
75	Redemption Ticket Motor (under cabinet)	-	-	-
79	Start Button Light (front of cabinet)	24-000017-00	18-007023-04	-
80 Std	Flasher Topper (top of backbox)	15-004127-07	51-005048-00	C-48



(20V/12V device wiring tables on pg C-137)



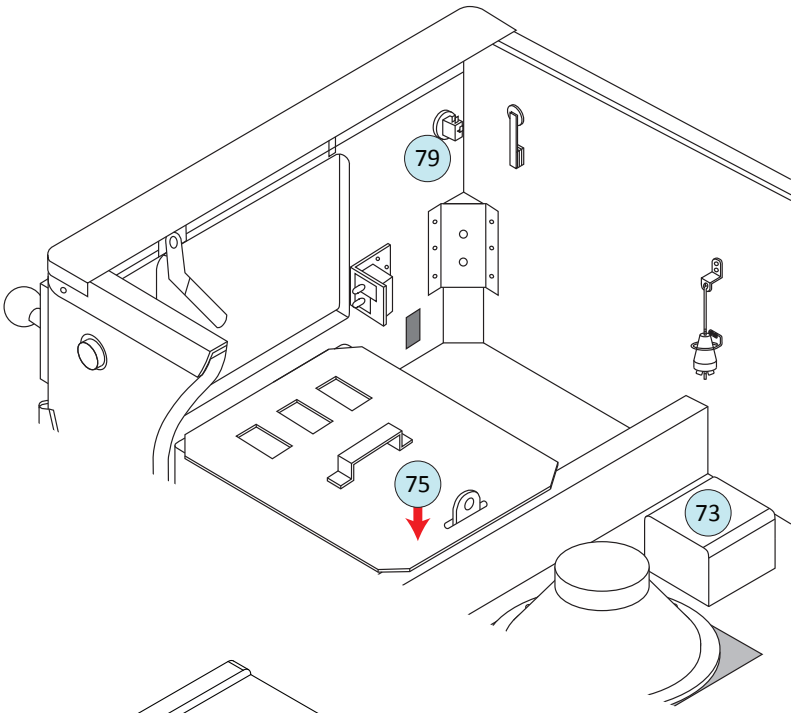




# 20-Volt Coil Locations

## Under Playfield

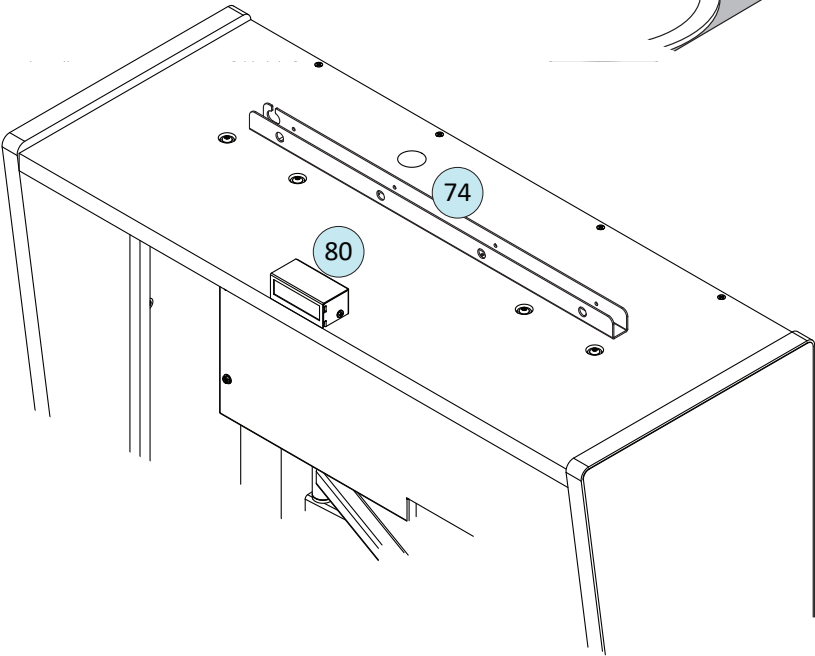
Drive	Function	Part Number	Part of Assembly	Drawing
57	STATION 3 Lock Release	23-000015-00	51-000084-00	C-38
58	Left Slingshot	23-000003-00	51-000003-00	C-16
59	Right Slingshot	23-000003-00	51-000003-00	C-16



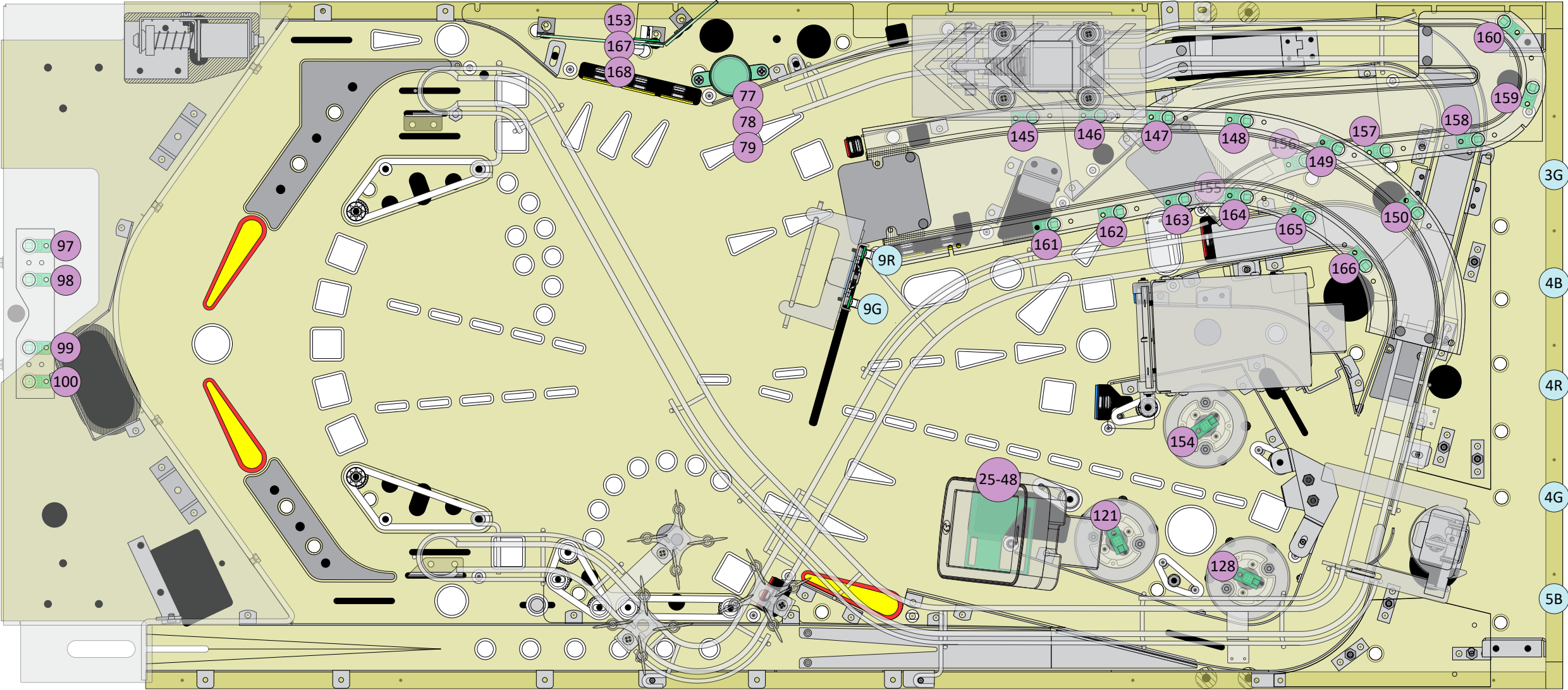
# 12-Volt Motor & Light Locations

## Under Playfield

Drive	Function	Part Number	Part of Assembly	Drawing
41	Moving Target Motor	23-005009-00	51-000081-00	C-30
42	Moving Target Relay	160-000000-0T	15-000009-00	D-108
44	Betty Spotlight	24-000017-00	-	-
45	Betty Diverter Motor	23-005009-00	52-000056-00	C-59
46	Top Drone Motor	23-005010-00	13-002005-00	C-10
47	Center Drone Motor	23-005010-00	13-002005-00	C-10
48	Bottom Drone Motor	23-005010-00	13-002005-00	C-10
73	Shaker Motor	23-005003-00	51-005027-01	C-41
74 CE	Topper Light (top of backbox)	24-000001-13	51-006010-00	C-4
75	Redemption Ticket Motor (under cabinet)	-	-	-
79	Start Button Light (front of cabinet)	24-000017-00	18-007023-04	-
80 Std	Flasher Topper (top of backbox)	15-004127-07	51-005048-00	C-48







(20V/12V device wiring tables on pg C-137)

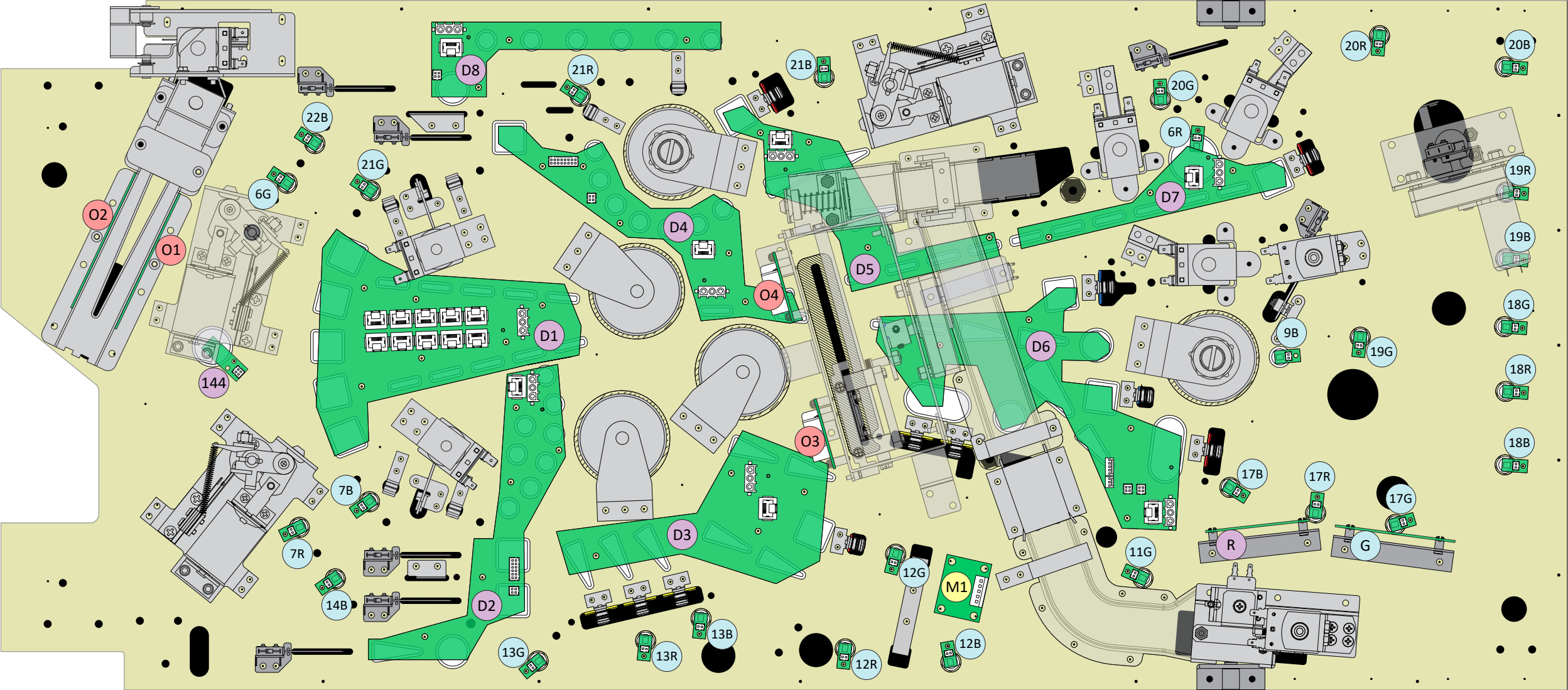


Color Key: ● GI/Flasher Boards ● RGB LED Boards

# Playfield Printed Circuit Boards

*Above Playfield*










Item Number	Color Key	PCB Type	Part Number	Function	Details
3G, 4R, 4G, 4B, 5B, 9R, 9G		GI LED Board	15-004127-X7	General illumination/flasher	D-64
25 to 48		DI Smartphone RGB LED Board	15-000042-00	Feature lighting	D-13
77 to 79		RGB Beacon Flasher Board	15-004063-04	Feature lighting	D-11
97 to 100, 121, 128, 145 to 150, 153 to 168		RGB GI Board	15-004151-X4	Feature lighting	D-65



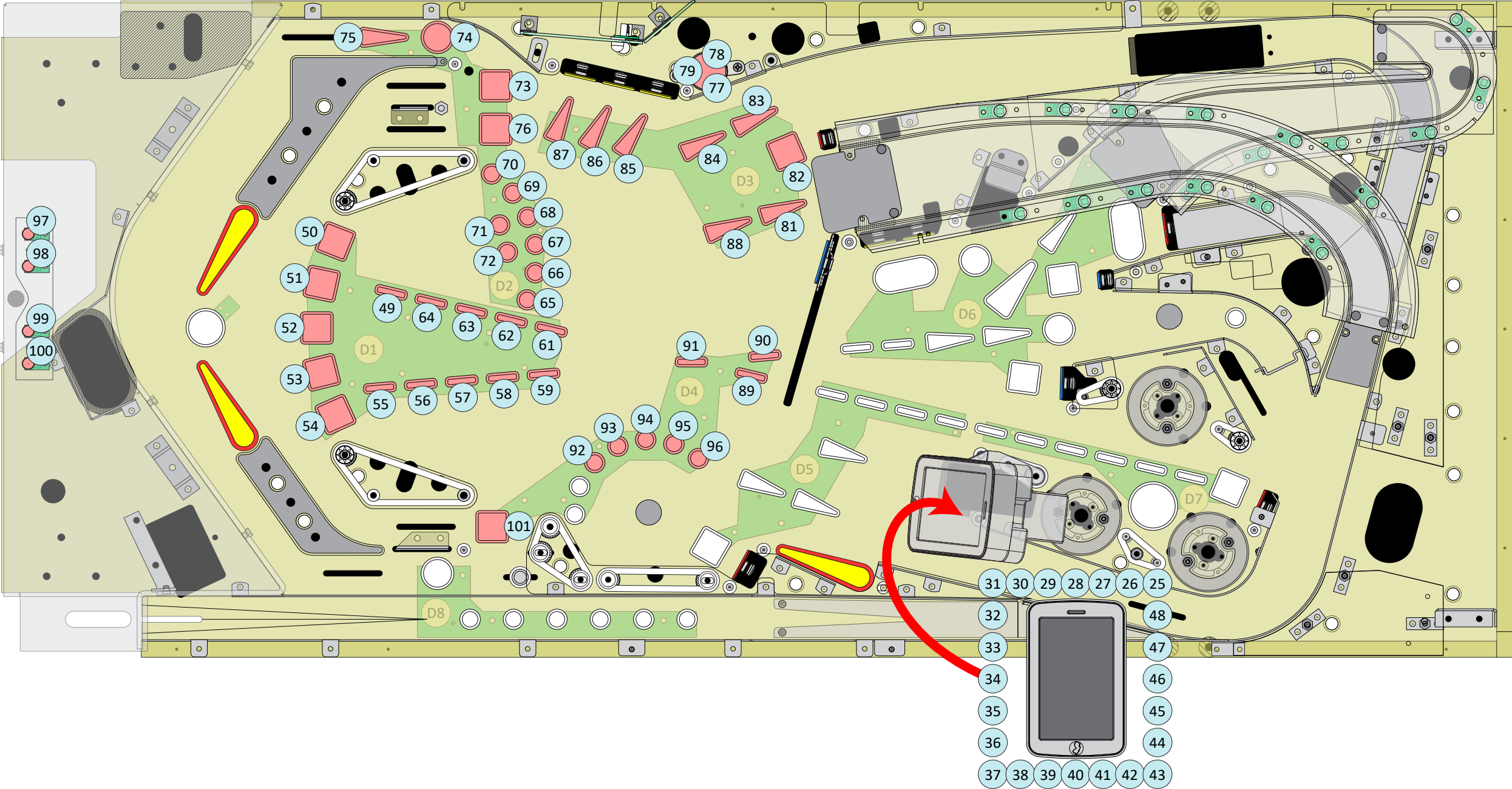
Color Key: ● GI Boards ● RGB LED Boards ● Opto Boards ● Other Boards

# Playfield Printed Circuit Boards

## Under Playfield

Item Number	Color Key	PCB Type	Part Number	Function	Details
6R, 6G, 7R, 7B, 9B, 11G, 12R, 12G, 12B, 13R, 13G, 13B, 14B, 17R, 17G, 17B, 18R, 18G, 18B, 19R, 19G, 19B, 20R, 20G, 20B, 21R, 21G, 21B, 22B		GI LED Board	15-004127-07	General illumination/flashers	D-64
D1 to D8		Main RGB LED Boards	15-000053-XX	Feature lighting	D-16
144		RGB LED Single Board	15-004128-04	Feature lighting	D-67
R		RGB LED Controller PCB Assy	15-004031-02	Feature lighting control	D-71
G		BAG Controller PCB Assy	15-004033-02	General illumination/flasher control	D-76
O1		5-Ball Trough Opto Receiver Board	15-000004-00	5-ball trough opto switch receivers	D-2
O2		5-Ball Trough Opto Transmitter Board	15-000004-01	5-ball trough opto switch transmitters	D-5
O3, O4		Opto I/O Board	15-000007-00	Playfield opto switch I/O	D-7
M1		Motor Relay Board	15-000009-00	Moving target motor control	D-108

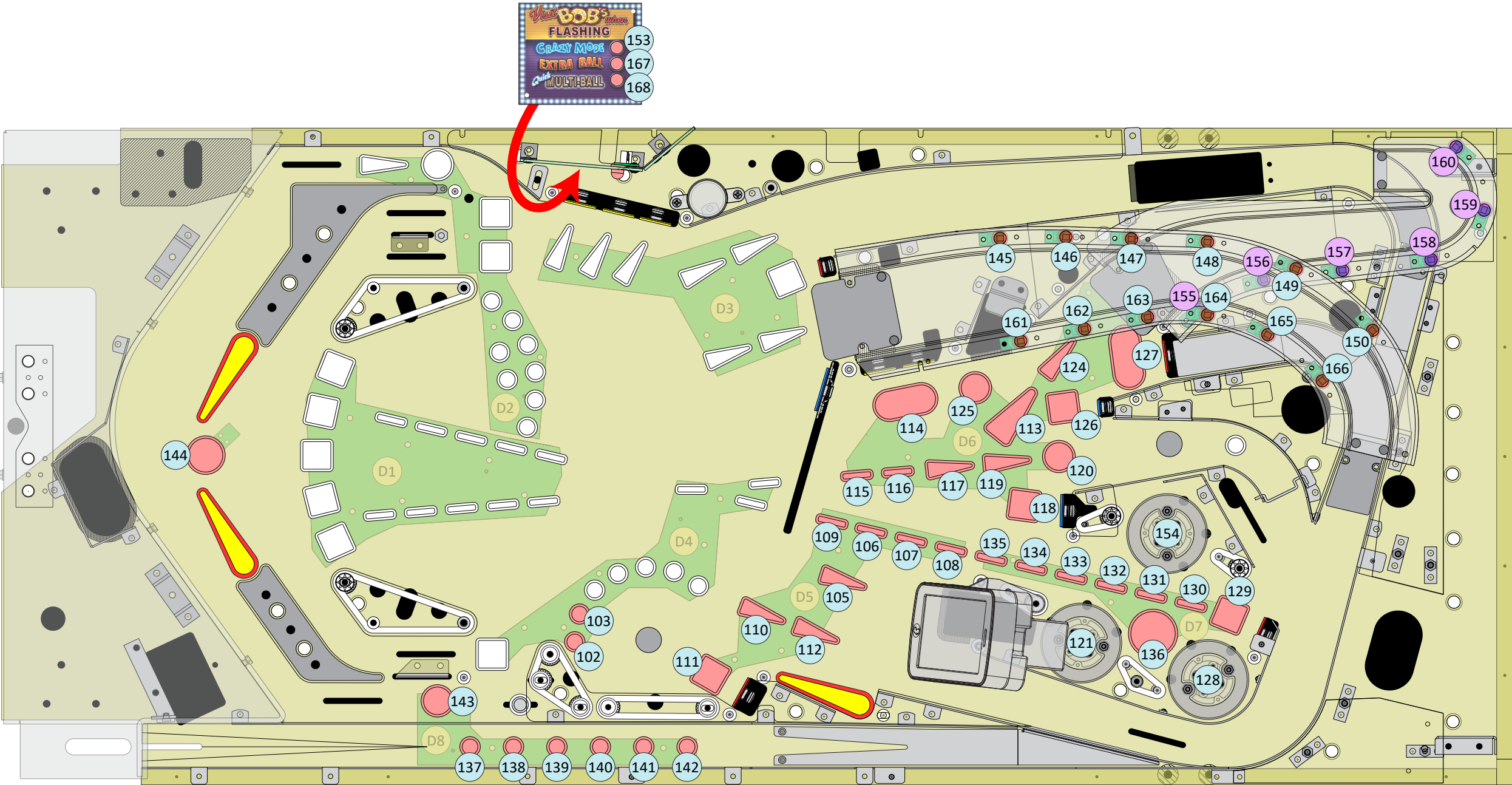




# Playfield Feature Lighting (RGB LEDs)































































*Above Playfield (1 of 2)*

RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd
25	Smartphone #1 (upper right)	15-000042-00	50	Charge Phone	15-000053-01	76	Lite Drone	15-000053-02
26	Smartphone #2 (top)	15-000042-00	51	Disaster	15-000053-01	77	Beacon Flasher #1	15-004063-04
27	Smartphone #3 (top)	15-000042-00	52	Lock W/ Lit	15-000053-01	78	Beacon Flasher #2	15-004063-04
28	Smartphone #4 (top)	15-000042-00	53	Under Attack!	15-000053-01	79	Beacon Flasher #3	15-004063-04
29	Smartphone #5 (top)	15-000042-00	54	Armageddon	15-000053-01	81	TRAIN 1 Arrow	15-000053-03
30	Smartphone #6 (top)	15-000042-00	55	Theater Laserbeam #9 (low)	15-000053-01	82	Spider	15-000053-03
31	Smartphone #7 (upper left)	15-000042-00	56	Theater Laserbeam #8	15-000053-01	83	Bob Arrow	15-000053-03
32	Smartphone #8 (left side)	15-000042-00	57	Theater Laserbeam #7	15-000053-01	84	Left Orbit/Loop Blank Arrow	15-000053-03
33	Smartphone #9 (left side)	15-000042-00	58	Theater Laserbeam #6	15-000053-01	85	BOB	15-000053-03
34	Smartphone #10 (left side)	15-000042-00	59	Theater Laserbeam #5	15-000053-01	86	BOB	15-000053-03
35	Smartphone #11 (left side)	15-000042-00	61	Wrench Laserbeam #12	15-000053-01	87	BOB	15-000053-03
36	Smartphone #12 (left side)	15-000042-00	62	Wrench Laserbeam #13	15-000053-01	88	TRAIN 1 Ramp Blank Arrow	15-000053-03
37	Smartphone #13 (lower left)	15-000042-00	63	Wrench Laserbeam #14	15-000053-01	89	Wrench Laserbeam #11	15-000053-04
38	Smartphone #14 (bottom)	15-000042-00	64	Wrench Laserbeam #15	15-000053-01	90	Theater Laserbeam #3	15-000053-04
39	Smartphone #15 (bottom)	15-000042-00	65	DIALED IN	15-000053-02	91	Theater Laserbeam #4	15-000053-04
40	Smartphone #16 (bottom)	15-000042-00	66	DIALED IN	15-000053-02	92	Package Delivery #5	15-000053-04
41	Smartphone #17 (bottom)	15-000042-00	67	DIALED IN	15-000053-02	93	Package Delivery #4	15-000053-04
42	Smartphone #18 (bottom)	15-000042-00	68	DIALED IN	15-000053-02	94	Package Delivery #3	15-000053-04
43	Smartphone #19 (lower right)	15-000042-00	69	DIALED IN	15-000053-02	95	Package Delivery #2	15-000053-04
44	Smartphone #20 (right side)	15-000042-00	70	DIALED IN	15-000053-02	96	Package Delivery #1 (high)	15-000053-04
45	Smartphone #21 (right side)	15-000042-00	71	DIALED IN	15-000053-02	97	Bottom Arch #1 (left)	15-000053-04, J402
46	Smartphone #22 (right side)	15-000042-00	72	DIALED IN	15-000053-02	98	Bottom Arch #2	15-000053-04, J402
47	Smartphone #23 (right side)	15-000042-00	73	Hurry Up!	15-000053-02	99	Bottom Arch #3	15-000053-04, J402
48	Smartphone #24 (right side)	15-000042-00	74	Special (left)	15-000053-02	100	Bottom Arch #4 (right)	15-000053-04, J402
49	Wrench Laserbeam #16 (low)	15-000053-01	75	Kickback	15-000053-02	101	10K+	15-000053-04

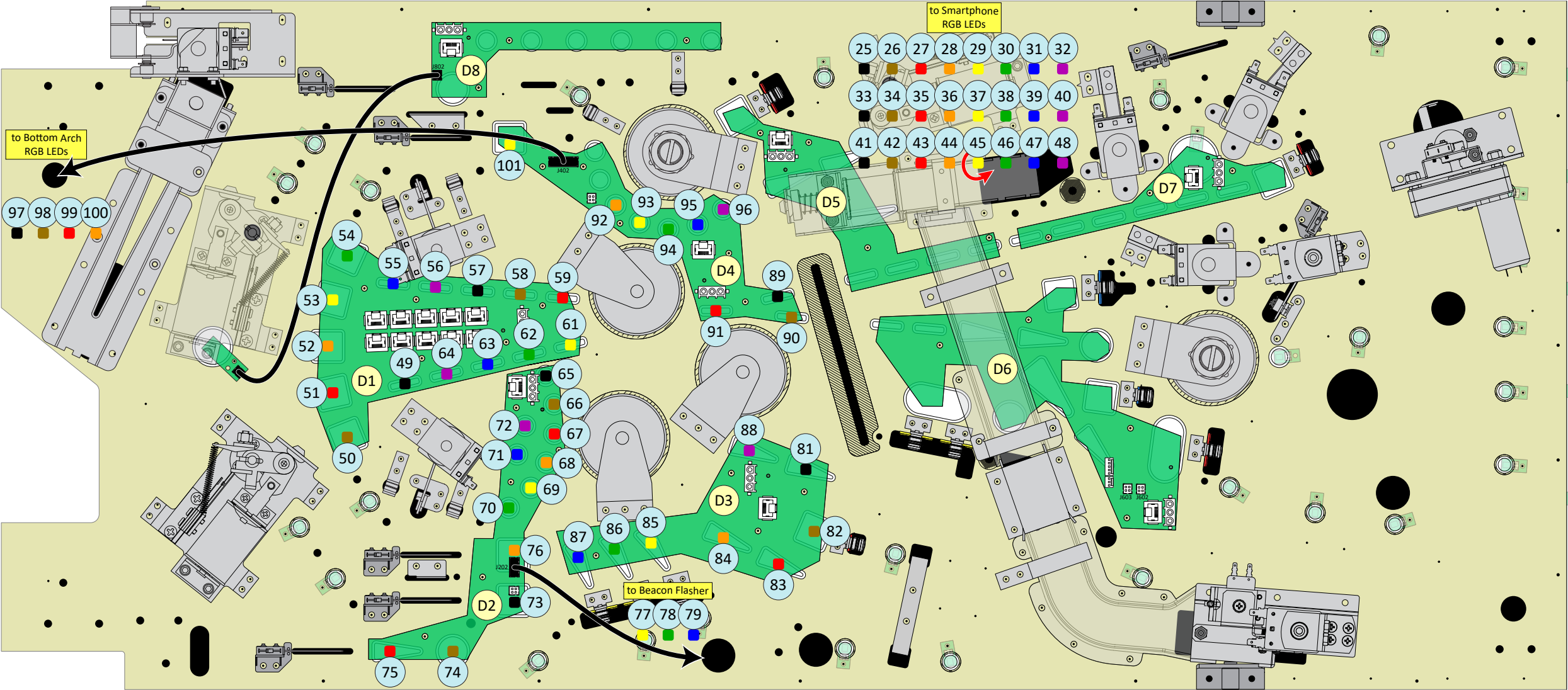


# Playfield Feature Lighting (RGB LEDs)

## Above Playfield (2 of 2)

RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd
102	 Package Delivery #7 (low)	15-000053-04	130	 Wrench Laserbeam #1 (high)	15-000053-07	157	 Upper Left Ramp #4	15-004031-02, J102
103	 Package Delivery #6	15-000053-04	131	 Wrench Laserbeam #2	15-000053-07	158	 Upper Left Ramp #3	15-004031-02, J102
105	 Phone Arrow	15-000053-05	132	 Wrench Laserbeam #3	15-000053-07	159	 Upper Left Ramp #2	15-004031-02, J102
106	 Wrench Laserbeam #9	15-000053-05	133	 Wrench Laserbeam #4	15-000053-07	160	 Upper Left Ramp #1 (high)	15-004031-02, J102
107	 Wrench Laserbeam #8	15-000053-05	134	 Wrench Laserbeam #5	15-000053-07	161	 Left Ramp #12 (right, low)	15-004031-02, J103
108	 Wrench Laserbeam #7	15-000053-05	135	 Wrench Laserbeam #6	15-000053-07	162	 Left Ramp #11	15-004031-02, J103
109	 Wrench Laserbeam #10	15-000053-05	136	 Super Jets W/ Flashing	15-000053-07	163	 Left Ramp #10	15-004031-02, J103
110	 TRAIN 2 Ramp Blank Arrow	15-000053-05	137	 Hold Spider	15-000053-08	164	 Left Ramp #9	15-004031-02, J103
111	 Drone	15-000053-05	138	 Hold Bonus X	15-000053-08	165	 Left Ramp #8	15-004031-02, J103
112	 TRAIN 2 Arrow	15-000053-05	139	 Hold Transit	15-000053-08	166	 Left Ramp #7 (right, high)	15-004031-02, J103
113	 Lock Arrow	15-000053-06	140	 Hold Kilowatts	15-000053-08	167	 Extra Ball (PF sign)	15-004031-02, J103
114	 LITE BIG BANG	15-000053-06	141	 Hold Drones	15-000053-08	168	 Quick Multiball (PF sign)	15-004031-02, J103
115	 Theater Laserbeam #2	15-000053-06	142	 Big Points	15-000053-08			
116	 Theater Laserbeam #1 (high)	15-000053-06	143	 Special, Right	15-000053-08			
117	 Theater Blank Arrow	15-000053-06	144	 Shoot Again	15-000053-08, J802			
118	 Theater <b>TICKET</b>	15-000053-06	145	 Left Ramp #6 (left, low)	15-004031-02, J101			
119	 ? Arrow	15-000053-06	146	 Left Ramp #5	15-004031-02, J101			
120	 D.I.E.	15-000053-06	147	 Left Ramp #4	15-004031-02, J101			
121	 Lower Pop Bumper	15-000053-06, J603	148	 Left Ramp #3	15-004031-02, J101			
124	 Upper Left Ramp Blank Arrow	15-000053-06	149	 Left Ramp #2	15-004031-02, J101			
125	 SIM Card	15-000053-06	150	 Left Ramp #1 (left, high)	15-004031-02, J101			
126	 Theater <b>TICKET</b>	15-000053-06	153	 Crazy Mode (PF sign)	15-004031-02, J102			
127	 BIG BANG!	15-000053-06	154	 Left Pop Bumper	15-004031-02, J102			
128	 Right Pop Bumper	15-000053-06, J602	155	 Upper Left Ramp #6 (low)	15-004031-02, J102			
129	 Wrench	15-000053-07	156	 Upper Left Ramp #5	15-004031-02, J102			



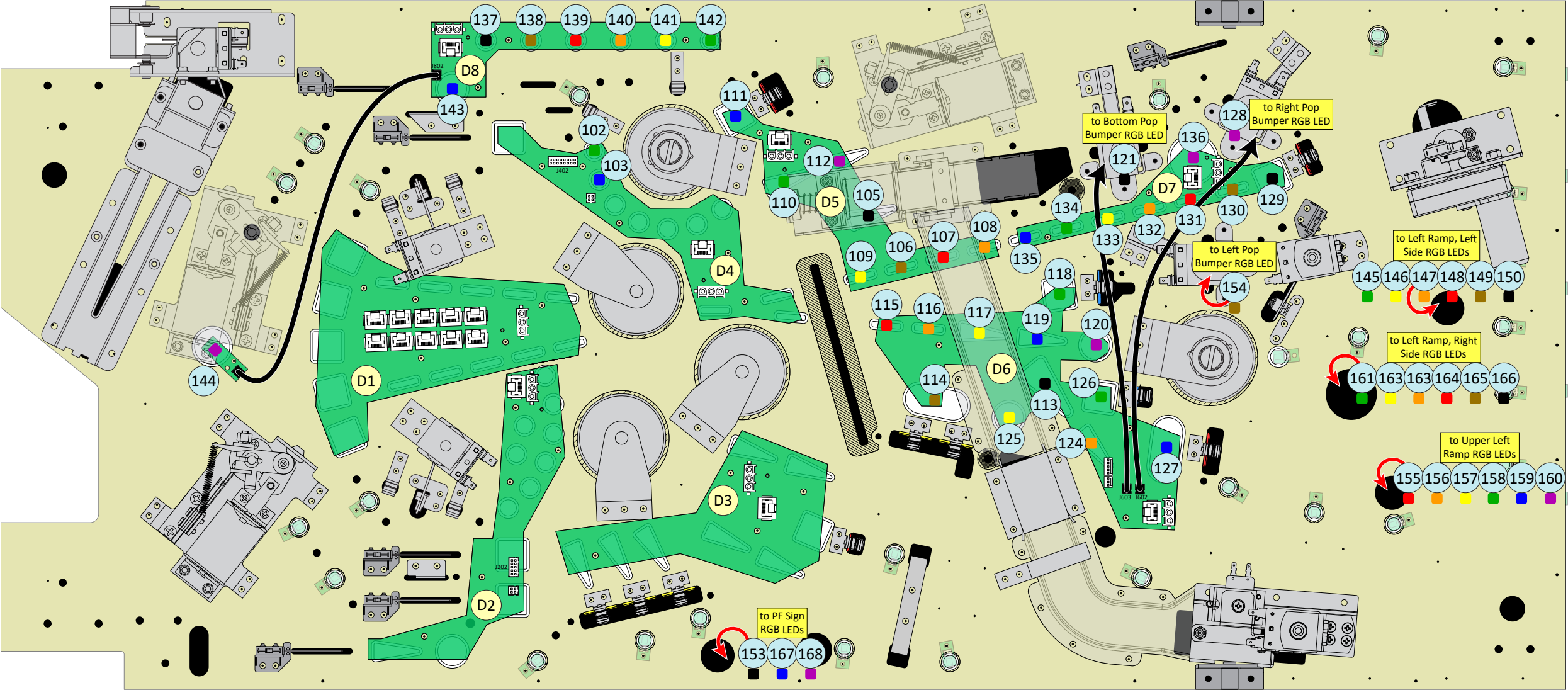




# Playfield Feature Lighting (RGB LEDs)































































*Under Playfield (1 of 2)*

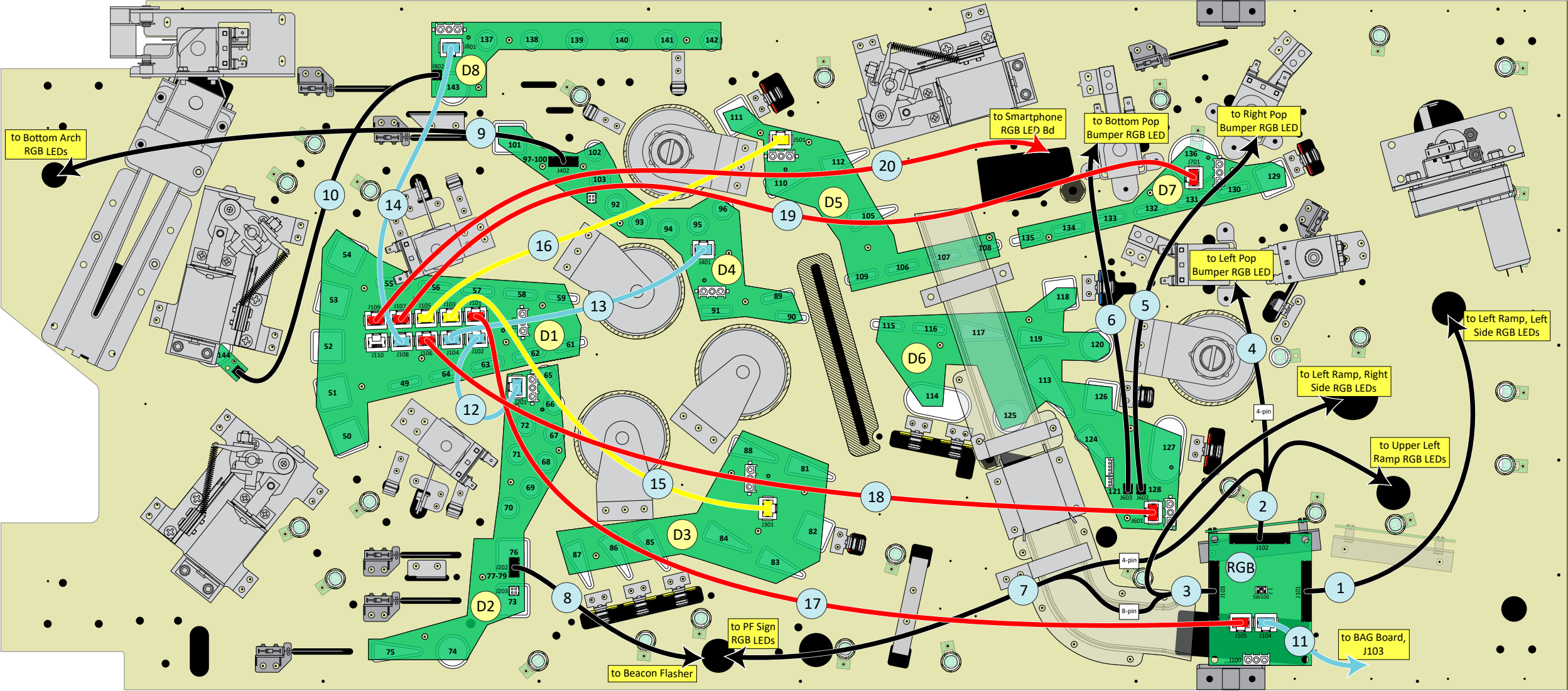
RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd
25	Smartphone #1 (upper right)	15-000042-00	50	Charge Phone	15-000053-01	76	Lite Drone	15-000053-02
26	Smartphone #2 (top)	15-000042-00	51	Disaster	15-000053-01	77	Beacon Flasher #1	15-004063-04
27	Smartphone #3 (top)	15-000042-00	52	Lock W/ Lit	15-000053-01	78	Beacon Flasher #2	15-004063-04
28	Smartphone #4 (top)	15-000042-00	53	Under Attack!	15-000053-01	79	Beacon Flasher #3	15-004063-04
29	Smartphone #5 (top)	15-000042-00	54	Armageddon	15-000053-01	81	TRAIN 1 Arrow	15-000053-03
30	Smartphone #6 (top)	15-000042-00	55	Theater Laserbeam #9 (low)	15-000053-01	82	Spider	15-000053-03
31	Smartphone #7 (upper left)	15-000042-00	56	Theater Laserbeam #8	15-000053-01	83	Bob Arrow	15-000053-03
32	Smartphone #8 (left side)	15-000042-00	57	Theater Laserbeam #7	15-000053-01	84	Left Orbit/Loop Blank Arrow	15-000053-03
33	Smartphone #9 (left side)	15-000042-00	58	Theater Laserbeam #6	15-000053-01	85	BOB	15-000053-03
34	Smartphone #10 (left side)	15-000042-00	59	Theater Laserbeam #5	15-000053-01	86	BOB	15-000053-03
35	Smartphone #11 (left side)	15-000042-00	61	Wrench Laserbeam #12	15-000053-01	87	BOB	15-000053-03
36	Smartphone #12 (left side)	15-000042-00	62	Wrench Laserbeam #13	15-000053-01	88	TRAIN 1 Ramp Blank Arrow	15-000053-03
37	Smartphone #13 (lower left)	15-000042-00	63	Wrench Laserbeam #14	15-000053-01	89	Wrench Laserbeam #11	15-000053-04
38	Smartphone #14 (bottom)	15-000042-00	64	Wrench Laserbeam #15	15-000053-01	90	Theater Laserbeam #3	15-000053-04
39	Smartphone #15 (bottom)	15-000042-00	65	DIALED IN	15-000053-02	91	Theater Laserbeam #4	15-000053-04
40	Smartphone #16 (bottom)	15-000042-00	66	DIALED IN	15-000053-02	92	Package Delivery #5	15-000053-04
41	Smartphone #17 (bottom)	15-000042-00	67	DIALED IN	15-000053-02	93	Package Delivery #4	15-000053-04
42	Smartphone #18 (bottom)	15-000042-00	68	DIALED IN	15-000053-02	94	Package Delivery #3	15-000053-04
43	Smartphone #19 (lower right)	15-000042-00	69	DIALED IN	15-000053-02	95	Package Delivery #2	15-000053-04
44	Smartphone #20 (right side)	15-000042-00	70	DIALED IN	15-000053-02	96	Package Delivery #1 (high)	15-000053-04
45	Smartphone #21 (right side)	15-000042-00	71	DIALED IN	15-000053-02	97	Bottom Arch #1 (left)	15-000053-04, J402
46	Smartphone #22 (right side)	15-000042-00	72	DIALED IN	15-000053-02	98	Bottom Arch #2	15-000053-04, J402
47	Smartphone #23 (right side)	15-000042-00	73	Hurry Up!	15-000053-02	99	Bottom Arch #3	15-000053-04, J402
48	Smartphone #24 (right side)	15-000042-00	74	Special, Left	15-000053-02	100	Bottom Arch #4 (right)	15-000053-04, J402
49	Wrench Laserbeam #16 (low)	15-000053-01	75	Kickback	15-000053-02	101	10K+	15-000053-04



# Playfield Feature Lighting (RGB LEDs)

## *Under Playfield (2 of 2)*

RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd	RGB#	Location/Function	RGB LED Bd
102	 Package Delivery #7 (low)	15-000053-04	130	 Wrench Laserbeam #1 (high)	15-000053-07	157	 Upper Left Ramp #4	15-004031-02, J102
103	 Package Delivery #6	15-000053-04	131	 Wrench Laserbeam #2	15-000053-07	158	 Upper Left Ramp #3	15-004031-02, J102
105	 Phone Arrow	15-000053-05	132	 Wrench Laserbeam #3	15-000053-07	159	 Upper Left Ramp #2	15-004031-02, J102
106	 Wrench Laserbeam #9	15-000053-05	133	 Wrench Laserbeam #4	15-000053-07	160	 Upper Left Ramp #1 (high)	15-004031-02, J102
107	 Wrench Laserbeam #8	15-000053-05	134	 Wrench Laserbeam #5	15-000053-07	161	 Left Ramp #12 (right, low)	15-004031-02, J103
108	 Wrench Laserbeam #7	15-000053-05	135	 Wrench Laserbeam #6	15-000053-07	162	 Left Ramp #11	15-004031-02, J103
109	 Wrench Laserbeam #10	15-000053-05	136	 Super Jets W/ Flashing	15-000053-07	163	 Left Ramp #10	15-004031-02, J103
110	 TRAIN 2 Ramp Blank Arrow	15-000053-05	137	 Hold Spider	15-000053-08	164	 Left Ramp #9	15-004031-02, J103
111	 Drone	15-000053-05	138	 Hold Bonus X	15-000053-08	165	 Left Ramp #8	15-004031-02, J103
112	 TRAIN 2 Arrow	15-000053-05	139	 Hold Transit	15-000053-08	166	 Left Ramp #7 (right, high)	15-004031-02, J103
113	 Lock Arrow	15-000053-06	140	 Hold Kilowatts	15-000053-08	167	 Extra Ball (PF sign)	15-004031-02, J103
114	 LITE BIG BANG	15-000053-06	141	 Hold Drones	15-000053-08	168	 Quick Multiball (PF sign)	15-004031-02, J103
115	 Theater Laserbeam #2	15-000053-06	142	 Big Points	15-000053-08			
116	 Theater Laserbeam #1 (high)	15-000053-06	143	 Special, Right	15-000053-08			
117	 Theater Blank Arrow	15-000053-06	144	 Shoot Again	15-000053-08, J802			
118	 Theater <b>TICKET</b>	15-000053-06	145	 Left Ramp #6 (left, low)	15-004031-02, J101			
119	 ? Arrow	15-000053-06	146	 Left Ramp #5	15-004031-02, J101			
120	 D.I.E.	15-000053-06	147	 Left Ramp #4	15-004031-02, J101			
121	 Lower Pop Bumper	15-000053-06, J603	148	 Left Ramp #3	15-004031-02, J101			
124	 Upper Left Ramp Blank Arrow	15-000053-06	149	 Left Ramp #2	15-004031-02, J101			
125	 SIM Card	15-000053-06	150	 Left Ramp #1 (left, high)	15-004031-02, J101			
126	 Theater <b>TICKET</b>	15-000053-06	153	 Crazy Mode (PF sign)	15-004031-02, J102			
127	 BIG BANG!	15-000053-06	154	 Left Pop Bumper	15-004031-02, J102			
128	 Right Pop Bumper	15-000053-06, J602	155	 Upper Left Ramp #6 (low)	15-004031-02, J102			
129	 Wrench	15-000053-07	156	 Upper Left Ramp #5	15-004031-02, J102			



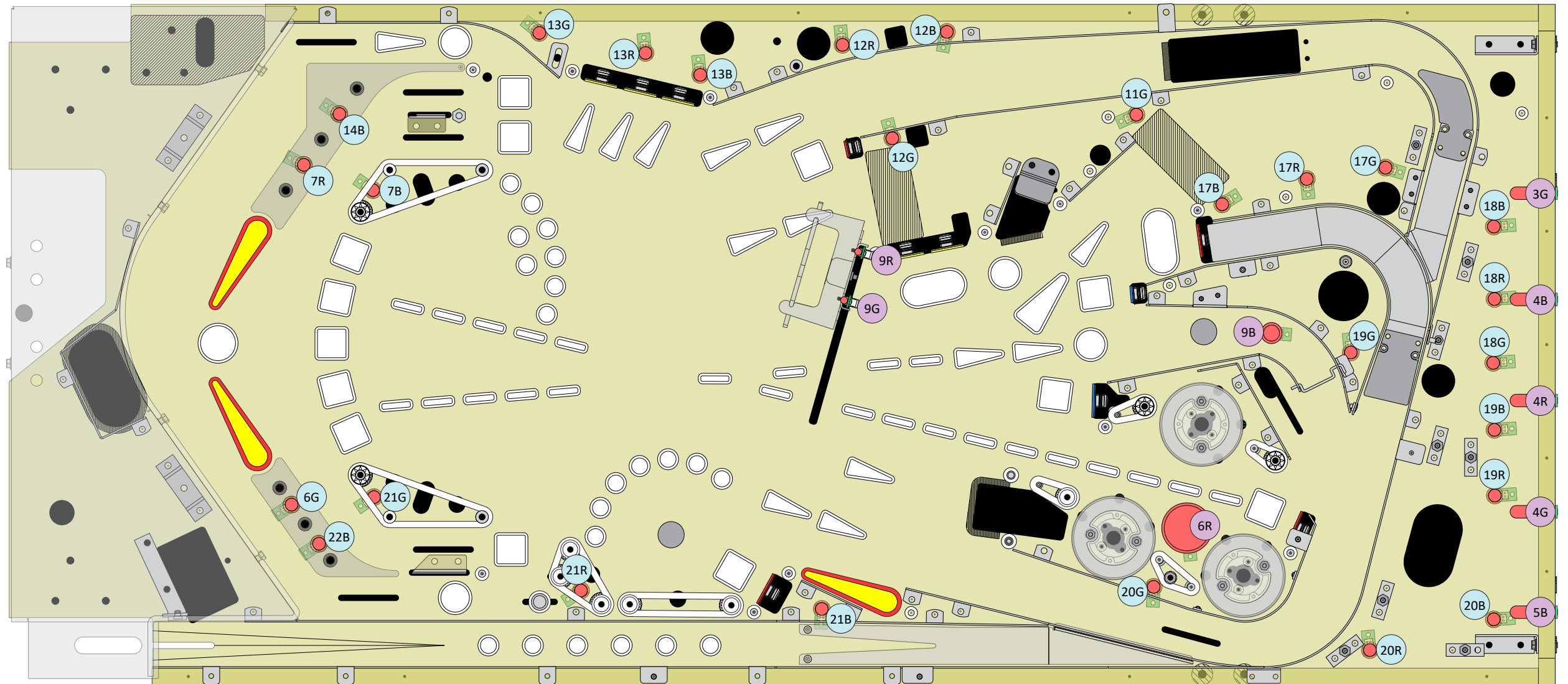


## RGB LED Feature Lighting Wiring

### *Under Playfield*



















Cable	Description	Part Number	Board Connection(s)	Details
1	DI Left Ramp, Left Side RGB LED Cable	19-009030-50	RGB LED Cont, J101	D-72, D-73
2	DI Upper Left Ramp/PF Sign/Left PB RGB LED Cable	19-009030-51	RGB LED Cont, J102	D-72, D-74
3	DI Left Ramp, Right Side/PF Sign RGB LED Cable	19-009030-52	RGB LED Cont, J103	D-72, D-75
4	DI Left Pop Bumper RGB LED Cable	19-009030-54	-	-
5	DI Right Pop Bumper RGB LED Cable	19-009030-56	D6, J602	-
6	DI Lower Pop Bumper RGB LED Cable	19-009030-55	D6, J603	-
7	Triple RGB LED Playfield Sign Cable	19-009030-53	-	-
8	DI Beacon Flasher RGB LED Cable	19-009030-02	D2, J202	-
9	DI Bottom Arch RGB LED Cable	19-009030-05	D4, J402	-
10	Single RGB LED Bd Cable	19-009030-03	D8, J802	-
11	Ethernet Cable, Cat5E, Shielded, 1ft	19-003111-01	RGB LED Cont, J104 - BAG Bd, J103	D-75, D-80
12	Ethernet Cable, Cat5E, Shielded, 1ft	19-003111-01	D1, J102 - D2, J201	-
13	Ethernet Cable, Cat5E, Shielded, 1ft	19-003111-01	D1, J104 - D4, J401	-
14	Ethernet Cable, Cat5E, Shielded, 1ft	19-003111-01	D1, J108 - D8, J801	-
15	Ethernet Cable, Cat5E, Shielded, 2ft	19-003111-02	D1, J103 - D3, J301	-
16	Ethernet Cable, Cat5E, Shielded, 2ft	19-003111-02	D1, J105 - D5, J501	-
17	Ethernet Cable, Cat5E, Shielded, 3ft	19-003111-03	RGB LED Cont, J105 - D1, J101	D-75
18	Ethernet Cable, Cat5E, Shielded, 3ft	19-003111-03	D1, J106 - D6, J601	-
19	Ethernet Cable, Cat5E, Shielded, 3ft	19-003111-03	D1, J107 - D7, J701	-
20	Ethernet Cable, Cat5E, Shielded, 3ft	19-003111-03	D1, J109 - Smartphone Bd, J101	-





















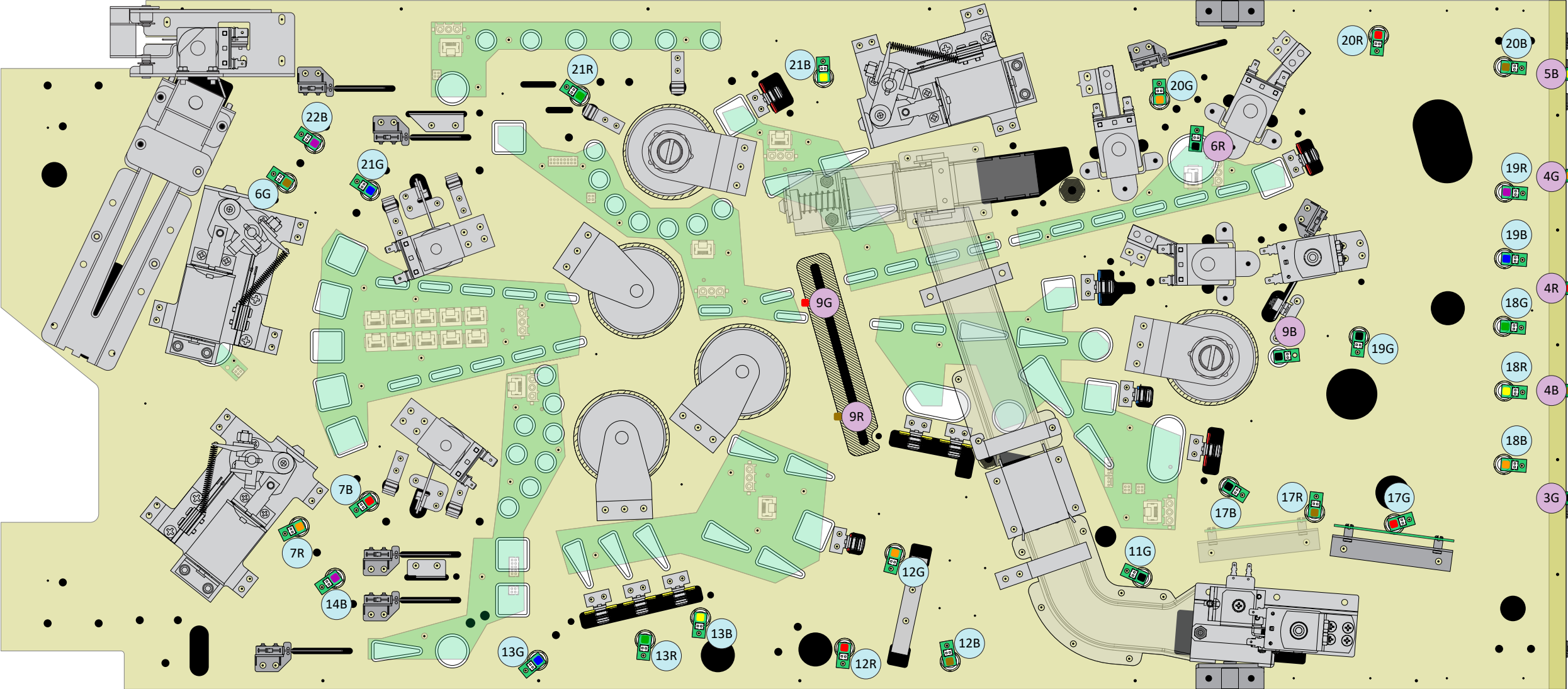


## Playfield GI Lighting & Flashers (LEDs)

*Above Playfield*



















LED#		Location/Function	BAG Bd Connector	Details
3G		Back Panel Flasher #1 (left)	J106	D-79, D-81
4R		Back Panel Flasher #3	J106	D-79, D-81
4G		Back Panel Flasher #4	J106	D-79, D-81
4B		Back Panel Flasher #2	J106	D-79, D-81
5B		Back Panel Flasher #5 (right)	J106	D-79, D-81
6R		Pop Bumpers Flasher	J107	D-79, D-81
6G		Right Return #2 (lower)	J107	D-79, D-81
7R		Left Return #2 (lower)	J107	D-79, D-81
7B		Left Sling	J107	D-79, D-81
9R		Moving Target Flasher, Left	J108	D-79, D-81
9G		Moving Target Flasher, Right	J108	D-79, D-81
9B		Theater Flasher	J108	D-79, D-81
11G		Left Ramps Area #4 (lower)	J109	D-79, D-82
12R		Left Side #2	J109	D-79, D-82
12G		Spider	J109	D-79, D-82
12B		Left Side #1 (upper)	J109	D-79, D-82
13R		Left Side #4	J109	D-79, D-82
13G		Left Side #5 (lower)	J109	D-79, D-82



















LED#		Location/Function	BAG Bd Connector	Details
13B		Left Side #3	J109	D-79, D-82
14B		Left Return #1 (upper)	J109	D-79, D-82
17R		Left Ramps Area #2	J111	D-79, D-82
17G		Left Ramps Area #1 (upper)	J111	D-79, D-82
17B		Left Ramps Area #3	J111	D-79, D-82
18R		Skyline #2	J111	D-79, D-82
18G		Skyline #3	J111	D-79, D-82
18B		Skyline #1 (left)	J111	D-79, D-82
19R		Skyline #5	J111	D-79, D-82
19G		Theater Exit	J112	D-79, D-82
19B		Skyline #4	J111	D-79, D-82
20R		Upper Right	J112	D-79, D-82
20G		Pop Bumpers	J112	D-79, D-82
20B		Skyline #6 (right)	J112	D-79, D-82
21R		Drones Area	J112	D-79, D-82
21G		Right Sling	J112	D-79, D-82
21B		Upper Flipper	J112	D-79, D-82
22B		Right Return #1 (upper)	J112	D-79, D-82



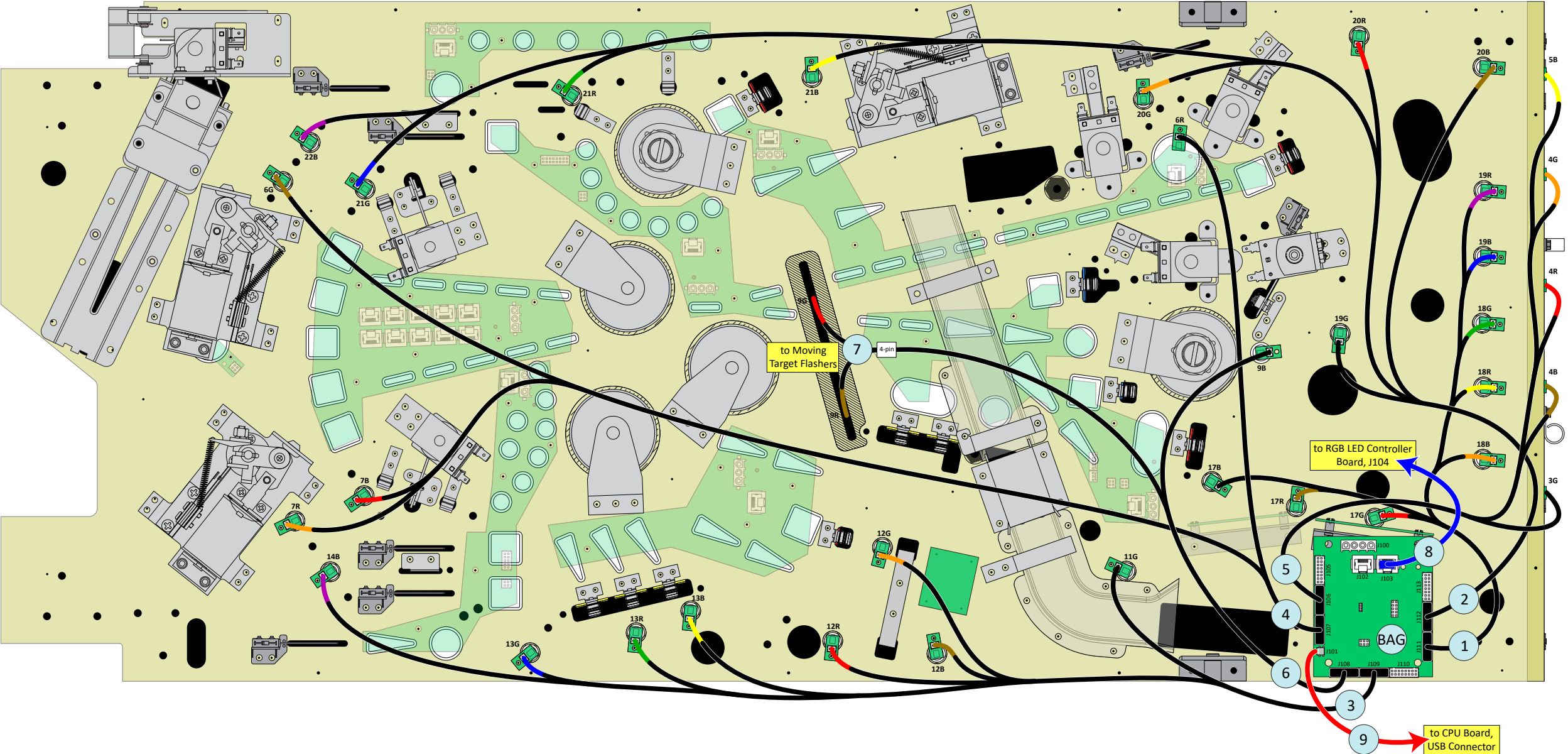
# Playfield GI Lighting & Flashers (LEDs)

*Under Playfield*

LED#		Location/Function	BAG Bd Connector	Details
3G		Back Panel Flasher #1 (left)	J106	D-79, D-81
4R		Back Panel Flasher #3	J106	D-79, D-81
4G		Back Panel Flasher #4	J106	D-79, D-81
4B		Back Panel Flasher #2	J106	D-79, D-81
5B		Back Panel Flasher #5 (right)	J106	D-79, D-81
6R		Pop Bumpers Flasher	J107	D-79, D-81
6G		Right Return #2 (lower)	J107	D-79, D-81
7R		Left Return #2 (lower)	J107	D-79, D-81
7B		Left Sling	J107	D-79, D-81
9R		Moving Target Flasher, Left	J108	D-79, D-81
9G		Moving Target Flasher, Right	J108	D-79, D-81
9B		Theater Flasher	J108	D-79, D-81
11G		Left Ramps Area #4 (lower)	J109	D-79, D-82
12R		Left Side #2	J109	D-79, D-82
12G		Spider	J109	D-79, D-82
12B		Left Side #1 (upper)	J109	D-79, D-82
13R		Left Side #4	J109	D-79, D-82
13G		Left Side #5 (lower)	J109	D-79, D-82

LED#		Location/Function	BAG Bd Connector	Details
13B		Left Side #3	J109	D-79, D-82
14B		Left Return #1 (upper)	J109	D-79, D-82
17R		Left Ramps Area #2	J111	D-79, D-82
17G		Left Ramps Area #1 (upper)	J111	D-79, D-82
17B		Left Ramps Area #3	J111	D-79, D-82
18R		Skyline #2	J111	D-79, D-82
18G		Skyline #3	J111	D-79, D-82
18B		Skyline #1 (left)	J111	D-79, D-82
19R		Skyline #5	J111	D-79, D-82
19G		Theater Exit	J112	D-79, D-82
19B		Skyline #4	J111	D-79, D-82
20R		Upper Right	J112	D-79, D-82
20G		Pop Bumpers	J112	D-79, D-82
20B		Skyline #6 (right)	J112	D-79, D-82
21R		Drones Area	J112	D-79, D-82
21G		Right Sling	J112	D-79, D-82
21B		Upper Flipper	J112	D-79, D-82
22B		Right Return #1 (upper)	J112	D-79, D-82



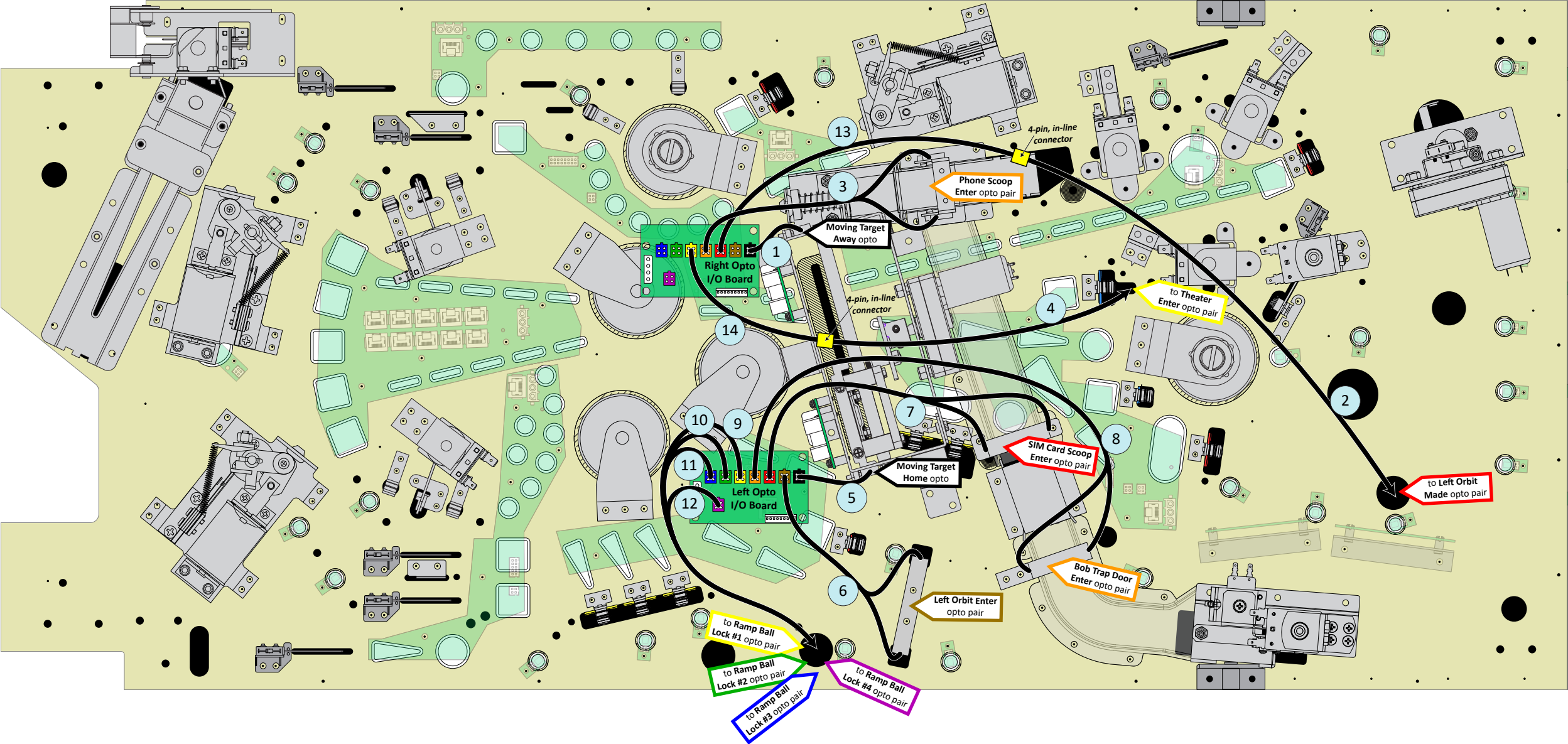




# GI Lighting & Flasher Wiring













*Under Playfield*

Cable	Description	Part Number	BAG Bd Connector	Details
1	DI Upper GI Cable	19-003122-01	J111	D-79, D-82
2	DI Right Side GI Cable	19-003122-02	J112	D-79, D-82
3	DI Left Side GI Cable	19-003122-03	J109	D-79, D-82
4	DI Lower Middle GI/Flasher Cable	19-003122-04	J107	D-79, D-81
5	DI Back Panel Flasher Cable	19-003122-05	J106	D-79, D-81
6	DI Middle Flasher Cable	19-003122-06	J108	D-79, D-81
7	DI Moving Target Switch & LED Cable	19-009034-00	-	-
8	Ethernet Cable, Cat5E, Shielded, 1ft	19-003111-01	J103	D-80
9	USB Cable, 2.0A to Right Angle Mini-B, M-M, Shielded, 7.5 ft	19-003124-07	J101	D-80

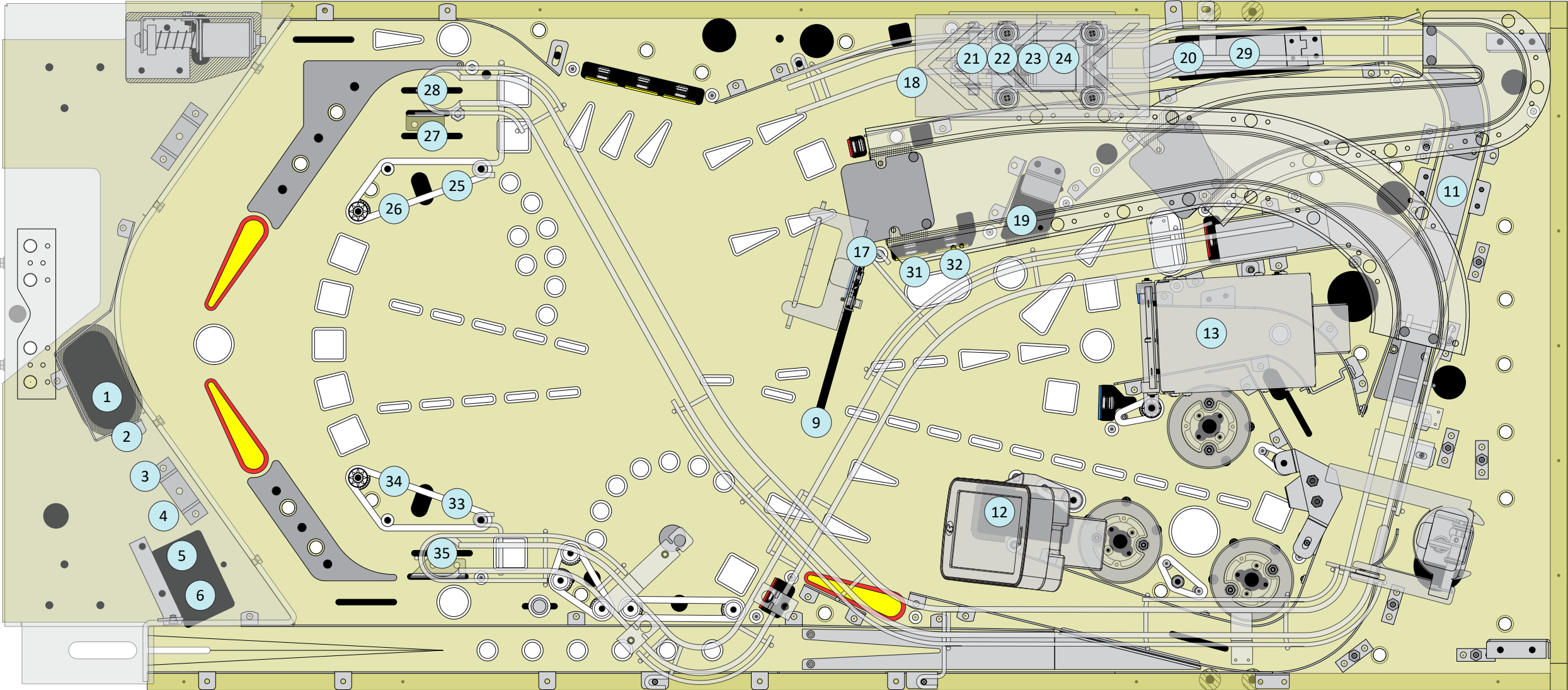


# Opto Wiring

## Under Playfield

Cable	Description	Function	Part Number	Opto I/O Board	Connector	Details
1	U-Shaped Opto Assy, OPB816Z, 5" Cable	Moving Target Away Switch	18-007024-05	Right	J1/BLK 	D-7, D-10
2	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	Left Orbit Made Switch	18-007025-24	Right	J3/RED 	D-7, D-10
3	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	Phone Scoop Enter Switch	18-007025-24	Right	J4/ORN 	D-7, D-10
4	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	Theater Enter Switch	18-007025-24	Right	J5/YEL 	D-7, D-10
5	U-Shaped Opto Assy, OPB816Z, 5" Cable	Moving Target Home Switch	18-007024-05	Left	J1/BLK 	D-7, D-9
6	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	Left Orbit Enter Switch	18-007025-24	Left	J2/BRN 	D-7, D-9
7	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	SIM Card Scoop Enter Switch	18-007025-24	Left	J3/RED 	D-7, D-9
8	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	Bob Trap Door Enter Switch	18-007025-24	Left	J4/ORN 	D-7, D-9
9	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	STATION 3 Lock #1 Switch	18-007025-24	Left	J5/YEL 	D-7, D-9
10	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	STATION 3 Lock #2 Switch	18-007025-24	Left	J6/GRN 	D-7, D-9
11	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	STATION 3 Lock #3 Switch	18-007025-24	Left	J7/BLU 	D-7, D-9
12	Opto Pair Assy, OPB100-EZ/SZ, 24" Cable	STATION 3 Lock #4 Switch	18-007025-24	Left	J8/VIO 	D-7, D-9
13	Opto Extension Cable, 18"	extend cable	19-003046-18	Right	J3/RED	-
14	Opto Extension Cable, 9"	extend cable	19-003046-09	Right	J5/YEL	-

(Matrixed Switch wiring table on pg C-134)



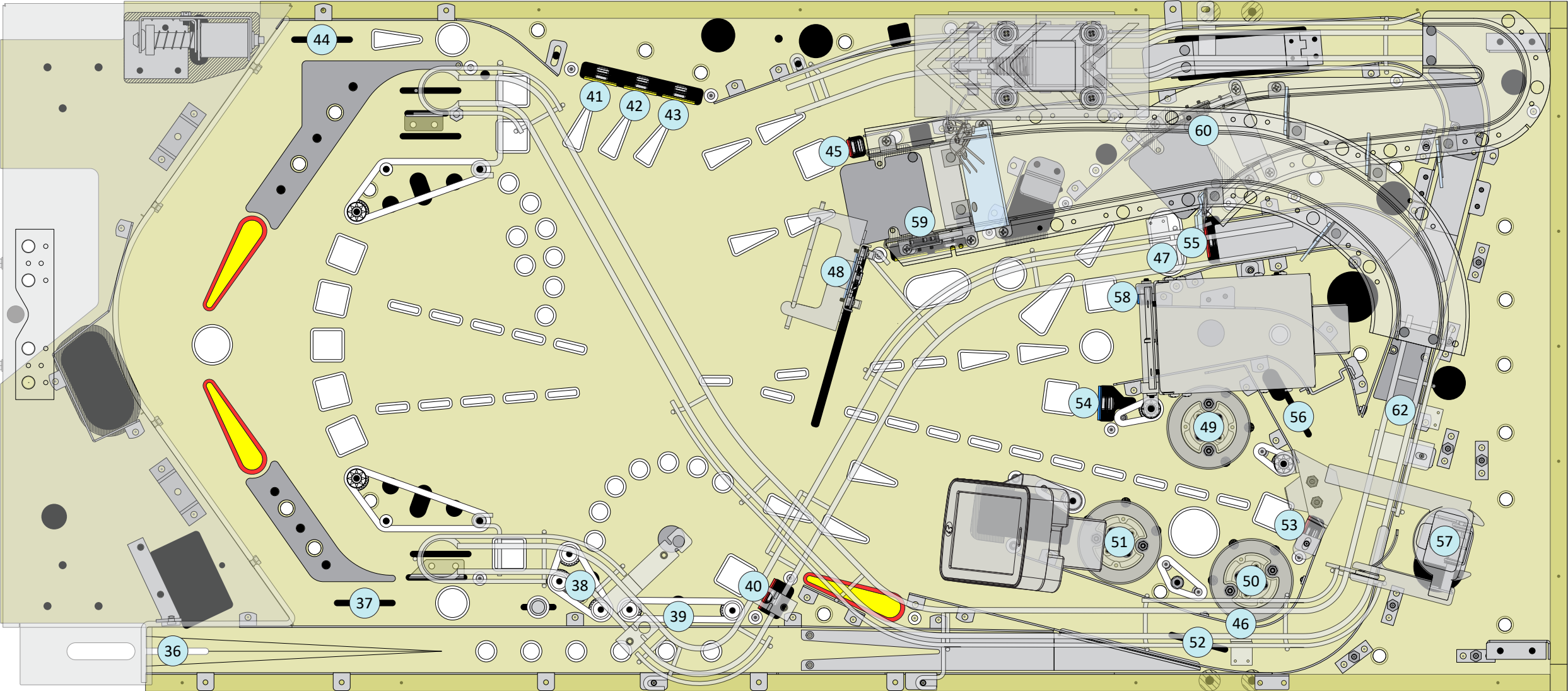
# Playfield Switch Locations

## Above Playfield (1 of 2)

Switch	Switch Function	Switch Type	Part Number	Part of Assembly	Drawing
1	5-Ball Trough #5 (left)	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
2	5-Ball Trough #4	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
3	5-Ball Trough #3	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
4	5-Ball Trough #2	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
5	5-Ball Trough #1 (right)	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
6	5-Ball Trough Jam	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
9	Moving Target Away (right)	U-Shaped Opto	18-005000-00	51-000081-00	C-30
11	Left Orbit Made	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
12	Phone Scoop Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
13	Theater Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
17	Moving Target Home (left)	U-Shaped Opto	18-005000-00	51-000081-00	C-30
18	Left Orbit Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
19	SIM Card Scoop Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
20	Bob Trap Door Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
21	STATION 3 Lock #1 (front)	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
22	STATION 3 Lock #2	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
23	STATION 3 Lock #3	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
24	STATION 3 Lock #4 (back)	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
25	Left Slingshot, High	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
26	Left Slingshot, Low	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
27	Left Return Lane, Right	Rollover Microswitch & Wireform, Rnd, LM	18-003004-01	-	-
28	Left Return Lane, Left	Rollover Microswitch & Wireform, Rnd, LM	18-003004-01	-	-
29	Bob Trap Door Open	Mini Switch w/Bent Blade Actuator	18-003015-10	51-000082-00	C-34
31	LITE BIG BANG, Low	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
32	LITE BIG BANG, High	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
33	Right Slingshot, High	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
34	Right Slingshot, Low	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
35	Right Return Lane	Rollover Microswitch & Wireform, Rnd, RtM	18-003004-00	-	-

(Matrixed Switch wiring table on pg C-134)



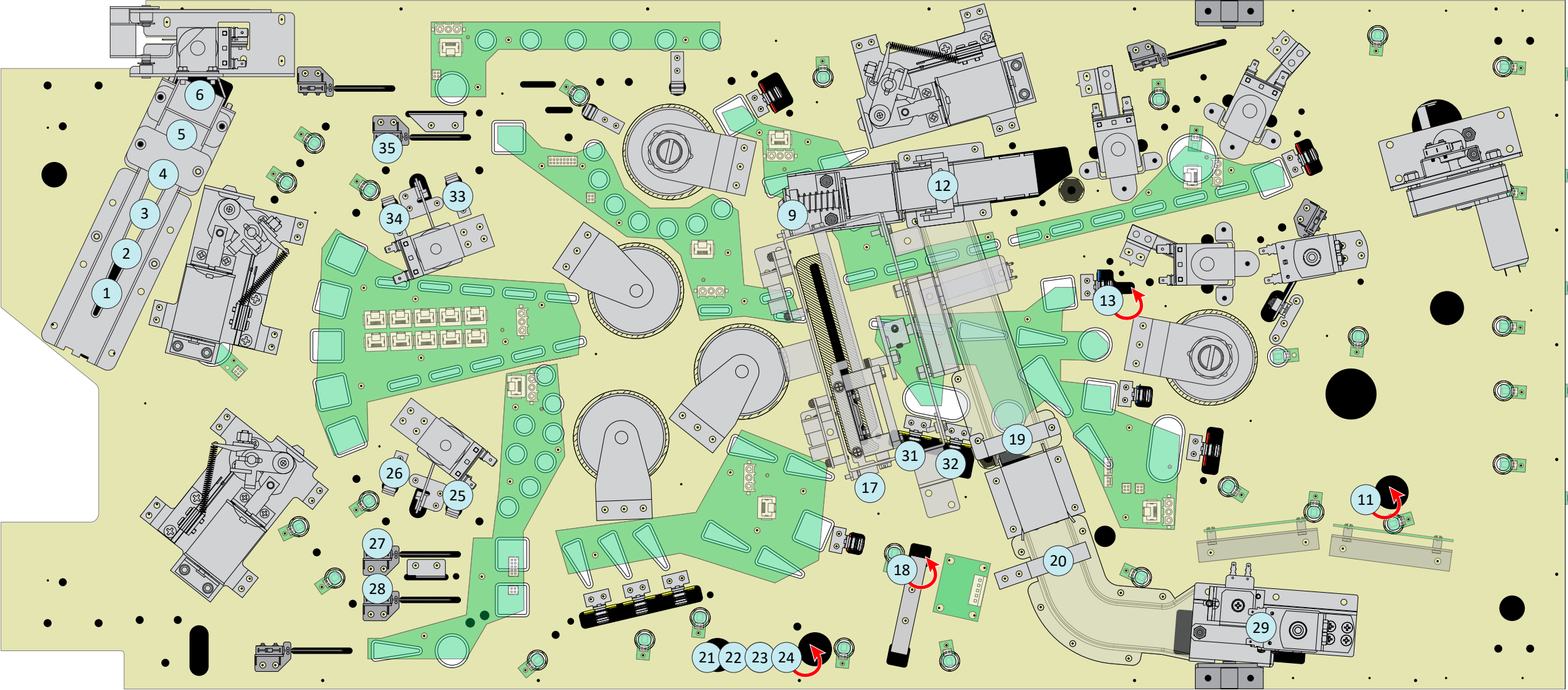


## Playfield Switch Locations

### *Above Playfield (2 of 2)*

Switch	Switch Function	Switch Type	Part Number	Part of Assembly	Drawing
36	Shooter Lane	Auto-Launch Microswitch & Wireform	18-003001-00	51-000026-00	C-22
37	SPECIAL Outlane, Right	Rollover Microswitch & Wireform, Rnd, RtM	18-003004-00	-	-
38	Drone Rubber, Bottom	Upright Leaf Switch Assy, FM	18-007008-00	-	-
39	Drone Rubber, Side	Upright Leaf Switch Assy, RM	18-007008-01	-	-
40	Drone Target	Round Stand-Up Tgt, FM, Angled, Red	18-009102-02	-	-
41	BOB Target	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
42	BOB Target	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
43	BOB Target	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
44	SPECIAL Outlane, Left	Rollover Microswitch & Wireform, Rnd, LM	18-003004-01	-	-
45	Spider Target	Oblong Stand-Up Target, FM, Angled, Red	18-009100-02	-	-
46	TRAIN 1 Ramp Not Diverted	Ramp/Subway Microswitch & Wireform	18-003017-00	13-002006-00	C-11
47	TRAIN 2 Ramp Made	Ramp/Subway Microswitch & Wireform	18-003017-00	13-002005-00	C-10
48	Moving Target Hit	Rectangle Stand-Up Target, No Mount, Lt. Blue	18-009015-13	51-000081-20	C-32
49	Left Pop Bumper	Pop Bumper Leaf Switch Assy	18-007007-00	51-000004-01	C-19
50	Right Pop Bumper	Pop Bumper Leaf Switch Assy	18-007007-00	51-000004-01	C-19
51	Lower Pop Bumper	Pop Bumper Leaf Switch Assy	18-007007-00	51-000004-01	C-19
52	Right Orbit Enter	Rollover Microswitch & Wireform, Rnd, RtM	18-003004-00	-	-
53	Wrench Target	Round Stand-Up Tgt, FM, Angled, Red	18-009102-02	-	-
54	Theater Ticket Target, Right	Round Stand-Up Tgt, FM, Angled, Blue	18-009102-06	-	-
55	BIG BANG Target	Round Stand-Up Tgt, FM, Angled, Red	18-009102-02	-	-
56	Skill Shot Kicker	Inline Kicker Microswitch & Wireform, RtM	18-003016-00	-	-
57	Betty Diverter Down	Microswitch w/Roller Actuator	18-003005-00	52-000056-00	C-59
58	Theater Ticket Target, Left	Oblong Stand-Up Tgt, FM, Angled, Blue	18-009100-06	-	-
59	TRAIN 1 Ramp Enter	Ramp Entrance Microswitch & Wireform	18-003011-00	52-000050-X0	C-54
60	Upper Left Ramp Enter	Ramp Entrance Microswitch & Wireform	18-003011-00	52-000051-X0	C-56
62	TRAIN 1 Ramp Made	Ramp/Subway Microswitch & Wireform	18-003017-00	13-002006-00	C-11

(Matrixed Switch wiring table on pg C-134)



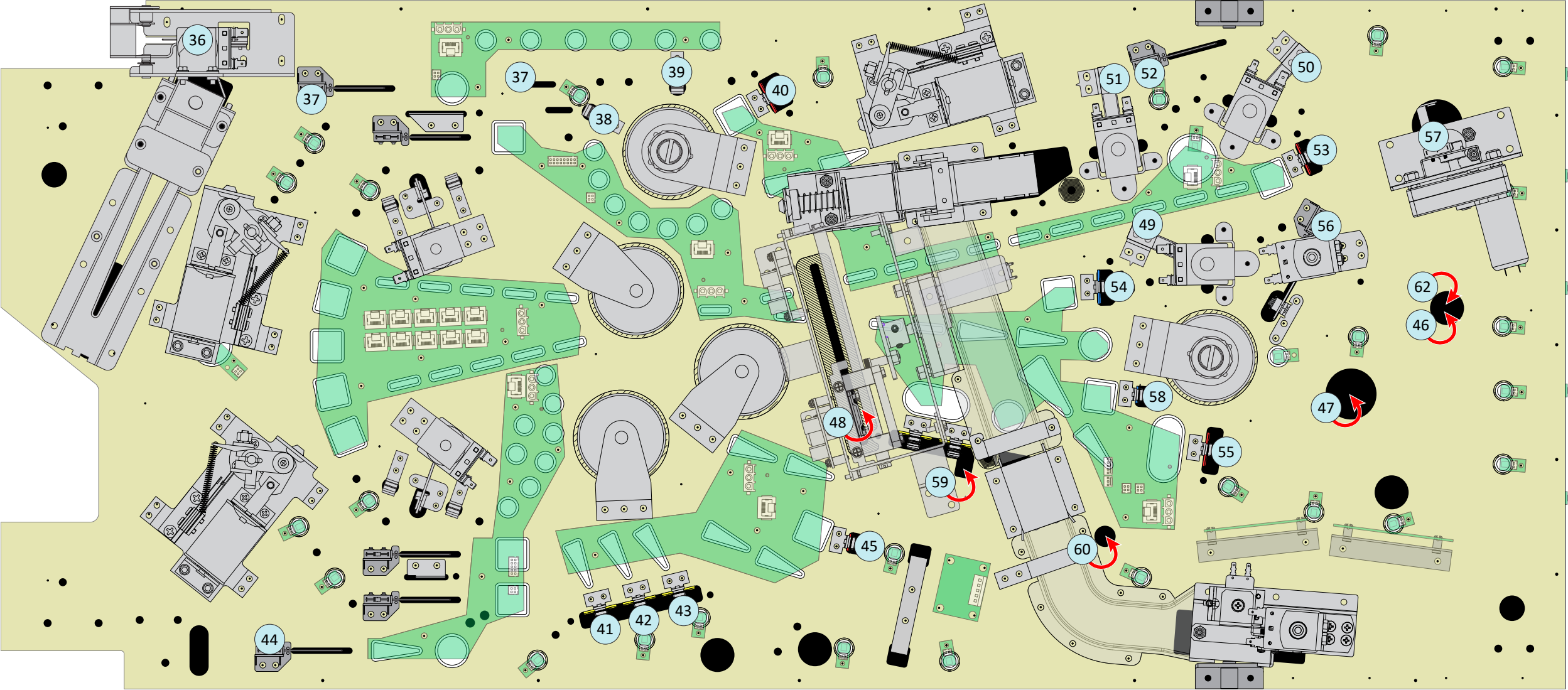
# Playfield Switch Locations

*Under Playfield (1 of 2)*

Switch	Switch Function	Switch Type	Part Number	Part of Assembly	Drawing
1	5-Ball Trough #5 (left)	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
2	5-Ball Trough #4	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
3	5-Ball Trough #3	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
4	5-Ball Trough #2	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
5	5-Ball Trough #1 (right)	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
6	5-Ball Trough Jam	Opto LED, Phototransistor Pair	15-005007-01, 15-005007-00	51-000021-00	C-20
9	Moving Target Away (right)	U-Shaped Opto	18-005000-00	51-000081-00	C-30
11	Left Orbit Made	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
12	Phone Scoop Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
13	Theater Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
17	Moving Target Home (left)	U-Shaped Opto	18-005000-00	51-000081-00	C-30
18	Left Orbit Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
19	SIM Card Scoop Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
20	Bob Trap Door Enter	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	-	-
21	STATION 3 Lock #1 (front)	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
22	STATION 3 Lock #2	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
23	STATION 3 Lock #3	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
24	STATION 3 Lock #4 (back)	Opto LED, Phototransistor Pair	18-005001-00, 18-005001-01	51-000084-00	C-38
25	Left Slingshot, High	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
26	Left Slingshot, Low	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
27	Left Return Lane, Right	Rollover Microswitch & Wireform, Rnd, LM	18-003004-01	-	-
28	Left Return Lane, Left	Rollover Microswitch & Wireform, Rnd, LM	18-003004-01	-	-
29	Bob Trap Door Open	Mini Switch w/Bent Blade Actuator	18-003015-10	51-000082-00	C-34
31	LITE BIG BANG, Low	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
32	LITE BIG BANG, High	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
33	Right Slingshot, High	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
34	Right Slingshot, Low	Upright Leaf Switch Assy, FM	18-007008-00	51-000003-00	C-16
35	Right Return Lane	Rollover Microswitch & Wireform, Rnd, RtM	18-003004-00	-	-

(Matrixed Switch wiring table on pg C-134)





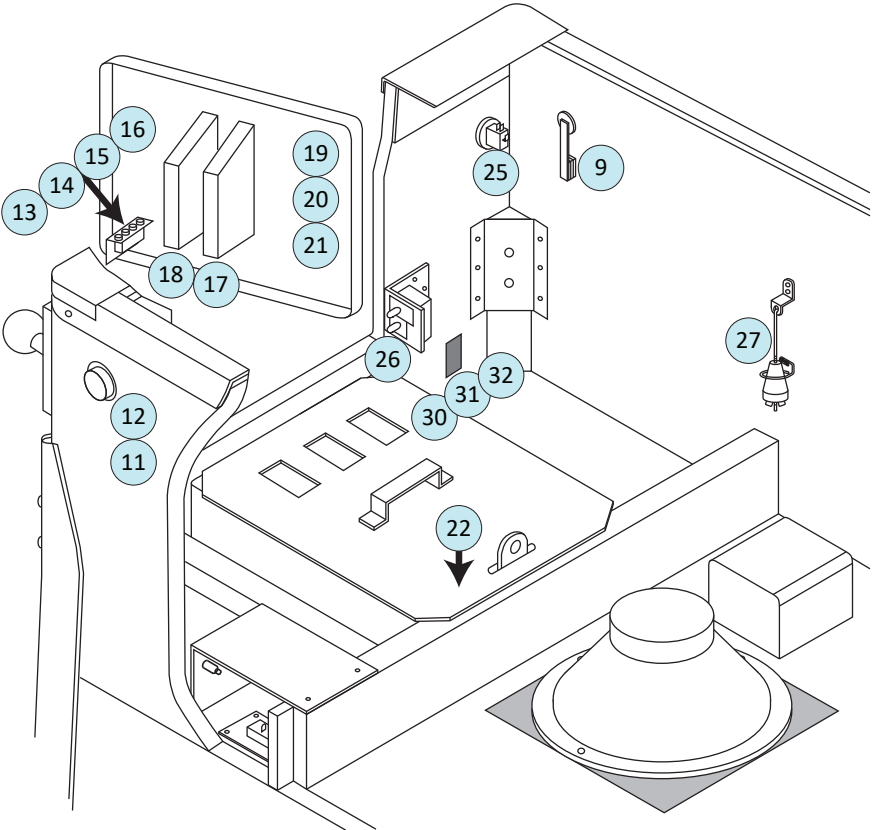
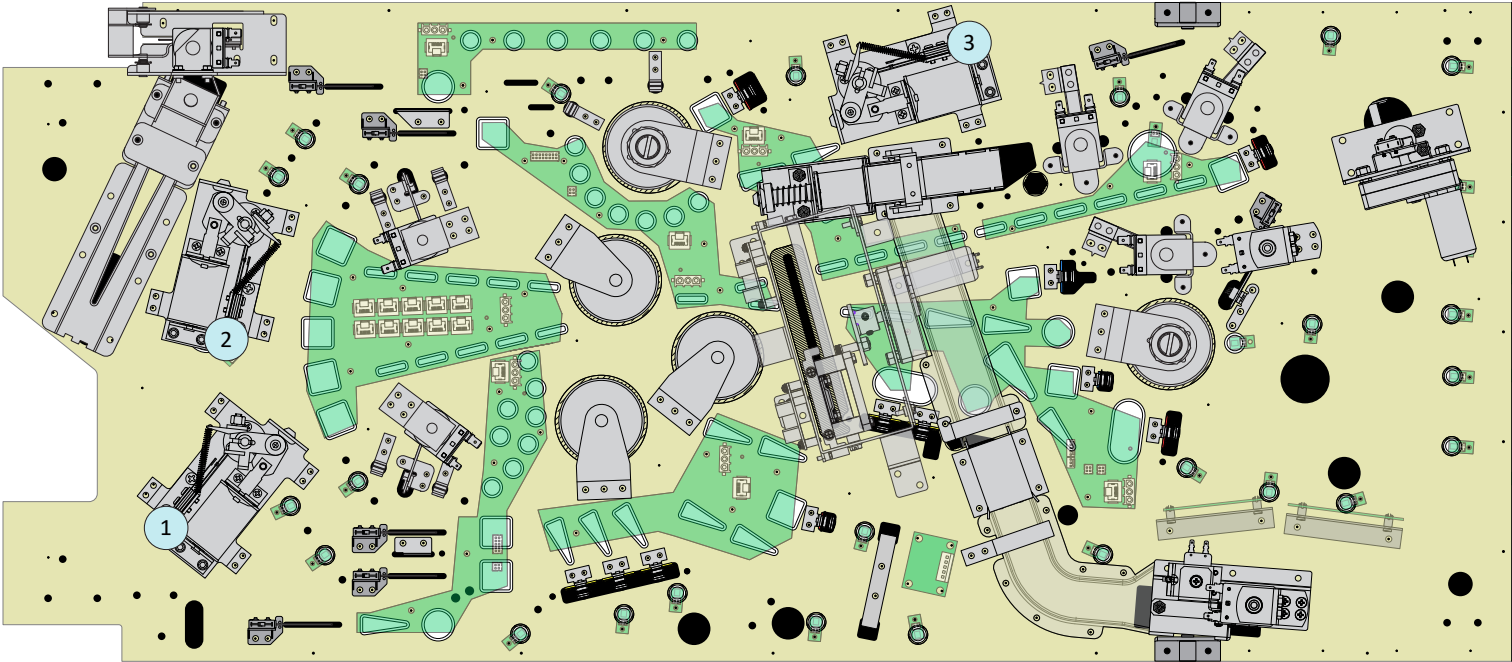
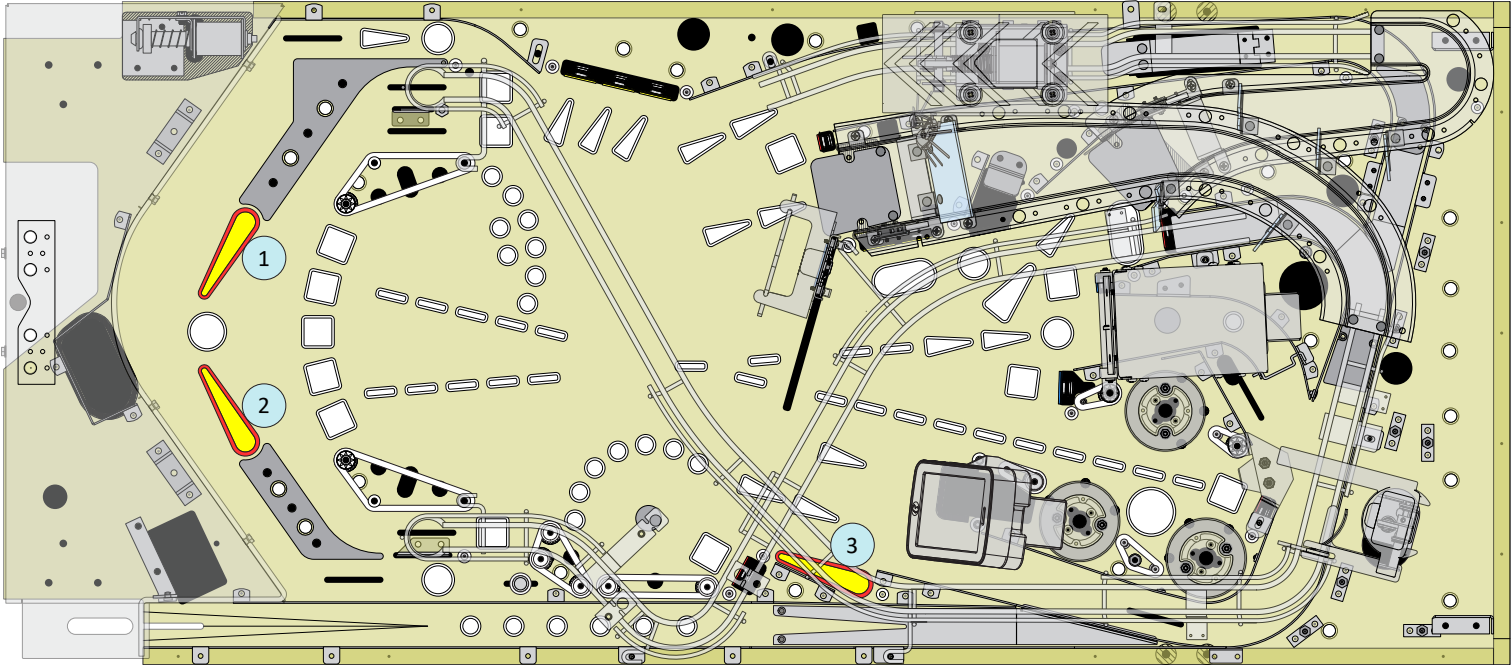


## Playfield Switch Locations

### *Under Playfield (2 of 2)*

Switch	Switch Function	Switch Type	Part Number	Part of Assembly	Drawing
36	Shooter Lane	Auto-Launch Microswitch & Wireform	18-003001-00	51-000026-00	C-22
37	SPECIAL Outlane, Right	Rollover Microswitch & Wireform, Rnd, RtM	18-003004-00	-	-
38	Drone Rubber, Bottom	Upright Leaf Switch Assy, FM	18-007008-00	-	-
39	Drone Rubber, Side	Upright Leaf Switch Assy, RM	18-007008-01	-	-
40	Drone Target	Round Stand-Up Tgt, FM, Angled, Red	18-009102-02	-	-
41	BOB Target	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
42	BOB Target	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
43	BOB Target	Round Stand-Up Tgt, FM, Angled, LR, Yellow	18-009102-04R	-	-
44	SPECIAL Outlane, Left	Rollover Microswitch & Wireform, Rnd, LM	18-003004-01	-	-
45	Spider Target	Oblong Stand-Up Target, FM, Angled, Red	18-009100-02	-	-
46	TRAIN 1 Ramp Not Diverted	Ramp/Subway Microswitch & Wireform	18-003017-00	13-002006-00	C-11
47	TRAIN 2 Ramp Made	Ramp/Subway Microswitch & Wireform	18-003017-00	13-002005-00	C-10
48	Moving Target Hit	Rectangle Stand-Up Target, No Mount, Lt. Blue	18-009015-13	51-000081-20	C-32
49	Left Pop Bumper	Pop Bumper Leaf Switch Assy	18-007007-00	51-000004-01	C-19
50	Right Pop Bumper	Pop Bumper Leaf Switch Assy	18-007007-00	51-000004-01	C-19
51	Lower Pop Bumper	Pop Bumper Leaf Switch Assy	18-007007-00	51-000004-01	C-19
52	Right Orbit Enter	Rollover Microswitch & Wireform, Rnd, RtM	18-003004-00	-	-
53	Wrench Target	Round Stand-Up Tgt, FM, Angled, Red	18-009102-02	-	-
54	Theater Ticket Target, Right	Round Stand-Up Tgt, FM, Angled, Blue	18-009102-06	-	-
55	BIG BANG Target	Round Stand-Up Tgt, FM, Angled, Red	18-009102-02	-	-
56	Skill Shot Kicker	Inline Kicker Microswitch & Wireform, RtM	18-003016-00	-	-
57	Betty Diverter Down	Microswitch w/Roller Actuator	18-003005-00	52-000056-00	C-59
58	Theater Ticket Target, Left	Oblong Stand-Up Tgt, FM, Angled, Blue	18-009100-06	-	-
59	TRAIN 1 Ramp Enter	Ramp Entrance Microswitch & Wireform	18-003011-00	52-000050-X0	C-54
60	Upper Left Ramp Enter	Ramp Entrance Microswitch & Wireform	18-003011-00	52-000051-X0	C-56
62	TRAIN 1 Ramp Made	Ramp/Subway Microswitch & Wireform	18-003017-00	13-002006-00	C-11

(Matrixed Switch wiring table on pg C-134)

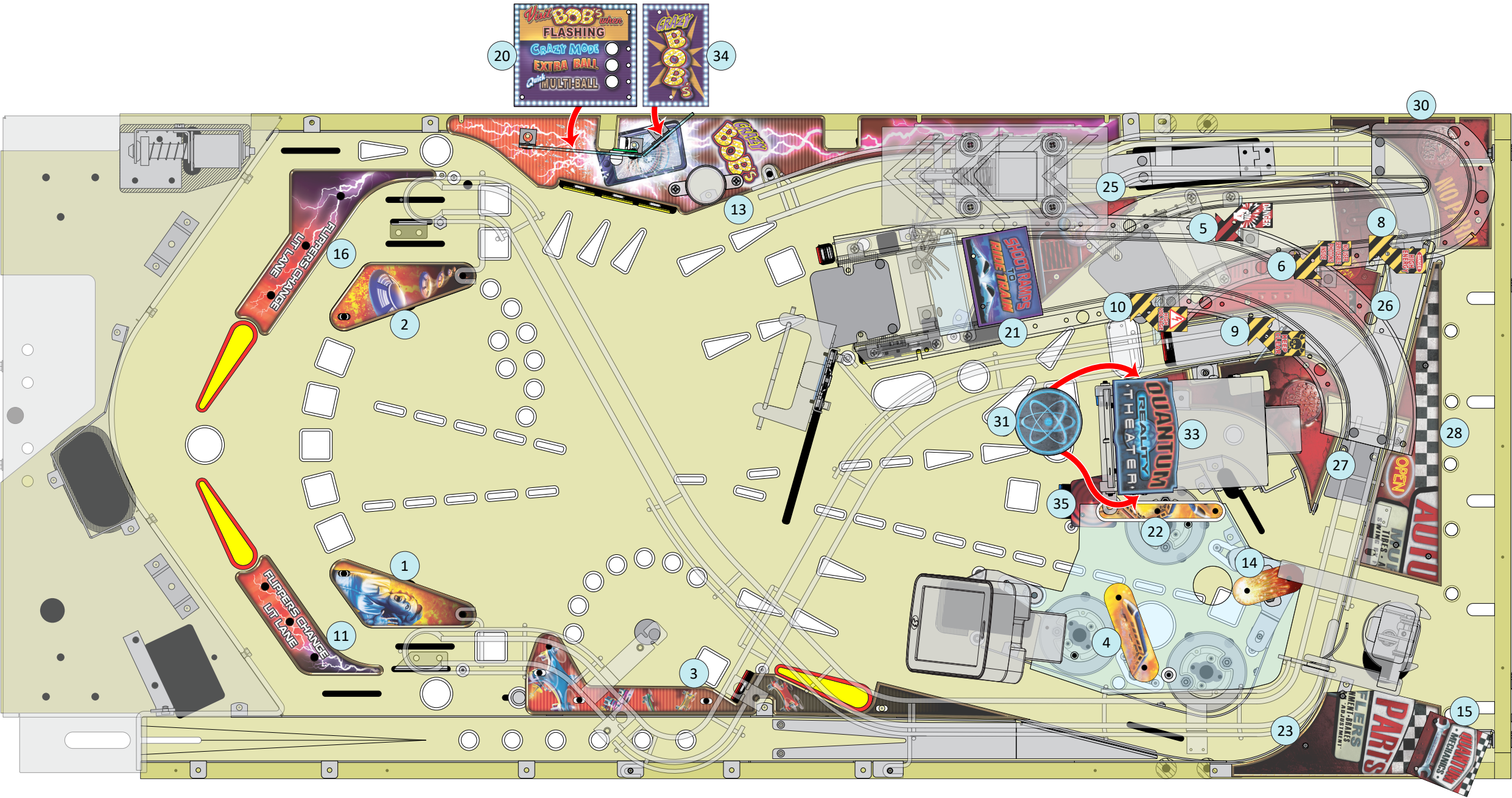


## Dedicated Switch Locations

Switch	Switch Function	Switch Type	Part Number	Part of Assembly	Drawing
1	Left Flipper EOS Switch	End Of Stroke Leaf Switch	18-000001-00	51-000002-00	C-14
2	Right Flipper EOS Switch	End Of Stroke Leaf Switch	18-000001-00	51-000001-14	C-12
3	Upper Right Flipper EOS Switch	End Of Stroke Leaf Switch	18-000001-00	51-000001-14	C-12
9	Left Flipper Switch	Flipper Leaf Switch, Single Contact	18-000005-00	-	-
11	Right Flipper Switch, Lower	Flipper Leaf Switch, Double Contact	18-000005-01	-	-
12	Right Flipper Switch, Upper	Flipper Leaf Switch, Double Contact	18-000005-01	-	-
13	Enter/Menu Button	Pushbutton, Momentary Contact	-	-	-
14	Up/Volume+ Button	Pushbutton, Momentary Contact	-	-	-
15	Down/Volume- Button	Pushbutton, Momentary Contact	-	-	-
16	Escape/Service Credit Button	Pushbutton, Momentary Contact	-	-	-
17	Left Coin Switch	Microswitch & Wireform	-	-	-
18	Right Coin Switch	Microswitch & Wireform	-	-	-
19	Center Dollar Bill Acceptor	Electronic	-	-	-
20	4th Coin Slot Switch	Electronic	-	-	-
21	5th Coin Slot Switch	Electronic	-	-	-
22	Ticket Motor Notch Switch (under cabinet)	U-Shaped Opto	-	-	-
25	Start Button	Start Button Switch Assy, Recessed, Yellow	18-007023-04	-	-
26	Coin Door Open	Miniswitch	18-003008-00	51-000035-00	-
27	Plumb Bob Tilt	Contact	-	51-000028-00	C-25
30	Headphone Panel Volume Down	Volume Control Switch, Rocker Style, SPDT	18-003006-01	51-000064-00	C-27
31	Headphone Panel Volume Up	Volume Control Switch, Rocker Style, SPDT	18-003006-01	51-000064-00	C-27
32	Headphone Panel Jack Sense	Contact	30-002506-20	15-000052-00	D-109

(Dedicated Switch wiring table on pg C-135)

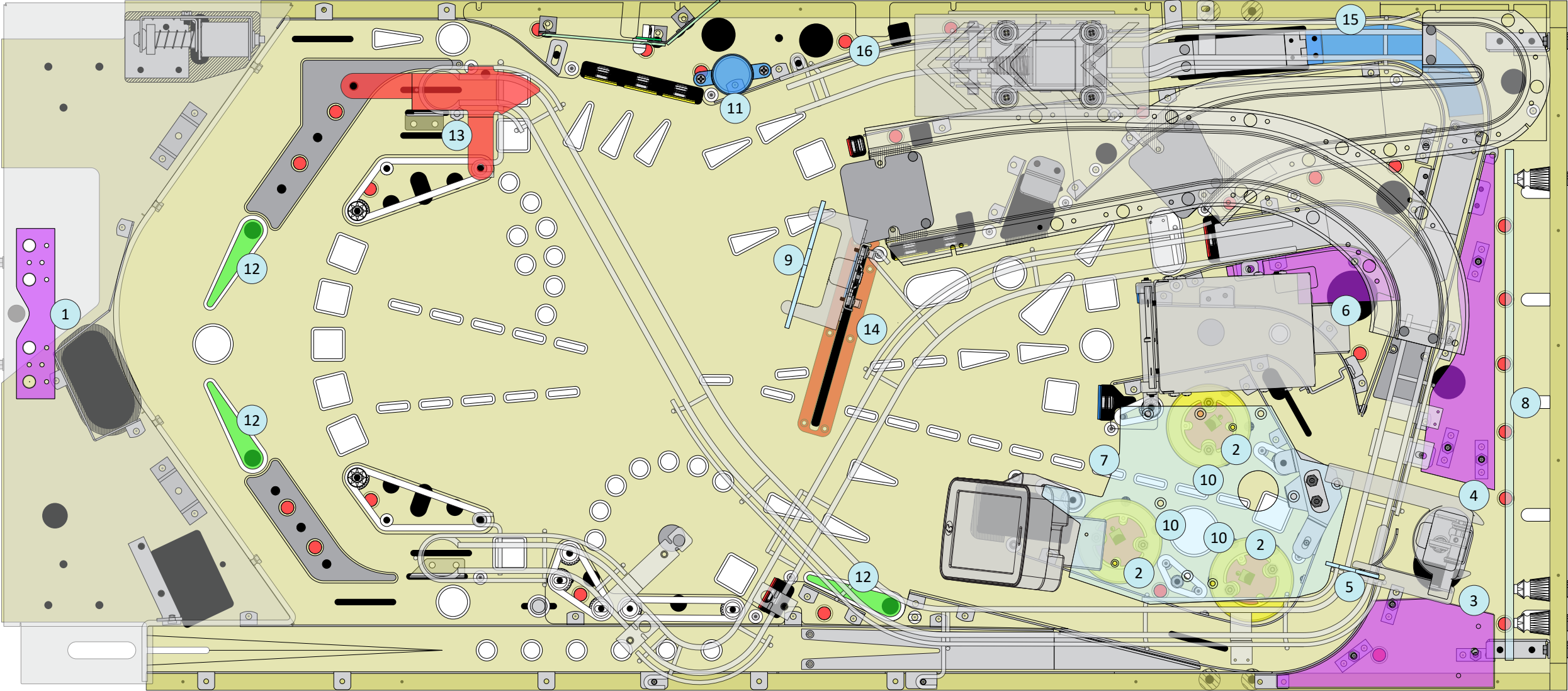




## Printed Playfield Plastics

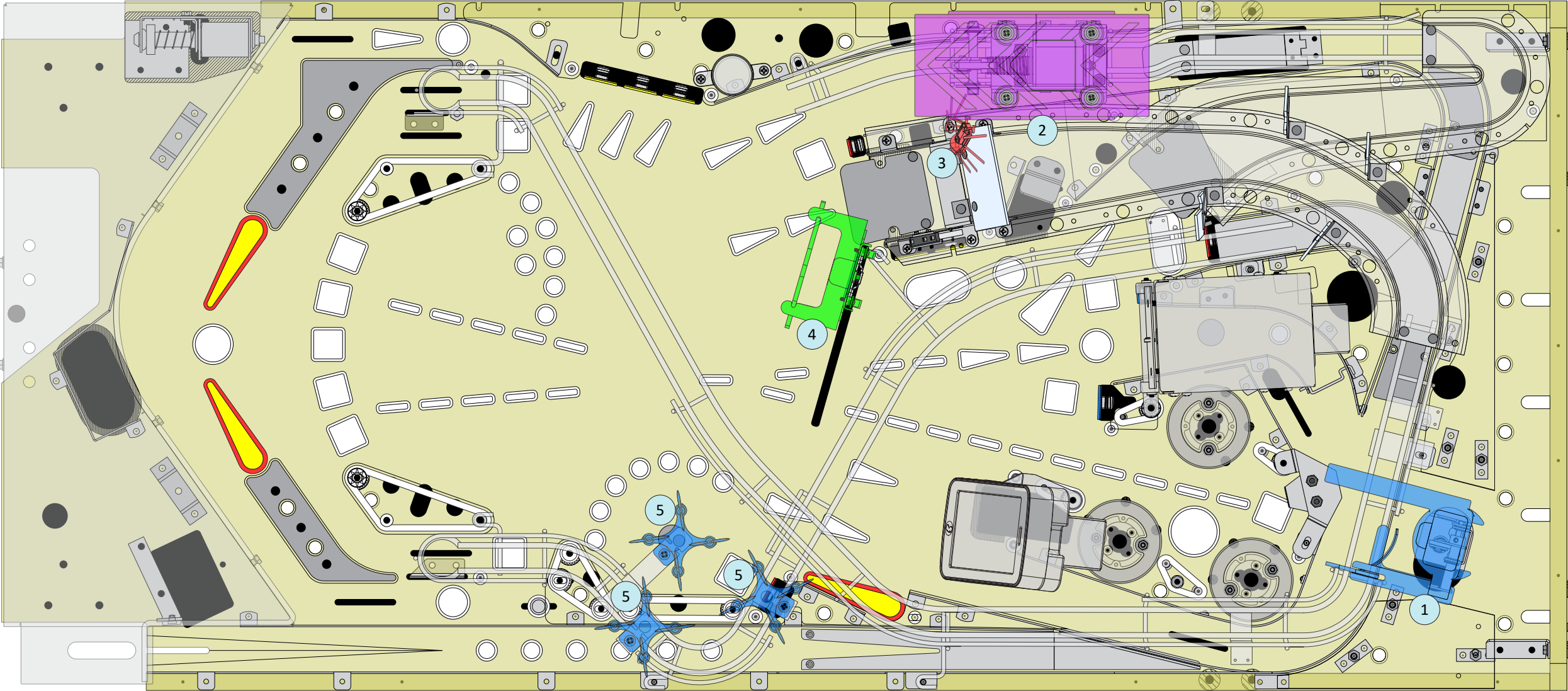
Item	Part Number	Description
1	30-003008-01	DI Right Slingshot Plastic
2	30-003008-02	DI Left Slingshot Plastic
3	30-003008-03	DI Right Side/Drones Plastic
4	30-003008-04	DI Mini PF/Short Train Plastic
5	30-003008-05	DI Ramp Arrow/DANGER Plastic
6	30-003008-06	DI Ramp Arrow/NO USER SERVICEABLE PHOTONS INSIDE Plastic
8	30-003008-08	DI Ramp Arrow/DANGER HIGH ENERGY Plastic
9	30-003008-09	DI Ramp Arrow/KEEP CLEAR Plastic
10	30-003008-10	DI Ramp Arrow/HIGH VOLTAGE Plastic
11	30-003008-11	DI Right Inlane Plastic
13	30-003008-13	DI Left Side/Lightning/Crazy Bob's Plastic
14	30-003008-14	DI Mini PF/Sparks Plastic
15	30-003008-15	DI Quantum Mechanics Sign Plastic
16	30-003008-16	DI Left Inlane Plastic
20	30-003008-20	DI Visit BOB'S When FLASHING Sign Plastic
21	30-003008-21	DI SHOOT RAMPS TO RIDE TRAIN Sign Plastic
22	30-003008-22	DI Mini PF/Long Train Plastic
23	30-003008-23	DI Betty/Auto Parts, Right Side Plastic
25	30-003008-25	DI Quantum Electric Co. Meter Plastic
26	30-003008-26	DI PROP OF DIALED-IN ELECT Plastic
27	30-003008-27	DI QUANTUM CITY SEWER Plastic
28	30-003008-28	DI Betty/Auto Parts, Left Side Plastic
30	30-003008-30	DI Upper Left Corner/DANGER POWER ACCESS Plastic
31 Std	30-003008-31	DI Atom Plastic (2 ea)
LE/CE	30-000111-02	DI Atom Emblem, 3D (2 ea)
33 Std	30-003008-33	DI Quantum Reality Theater Sign Plastic
LE/CE	30-000111-01	DI Quantum Reality Theater Sign, 3D
34	30-003008-34	DI Crazy Bob's Sign Plastic
35	30-003008-35	DI Circles Plastic





## Clear Plastics, Bumper Caps, Flasher Domes & Flipper Bats

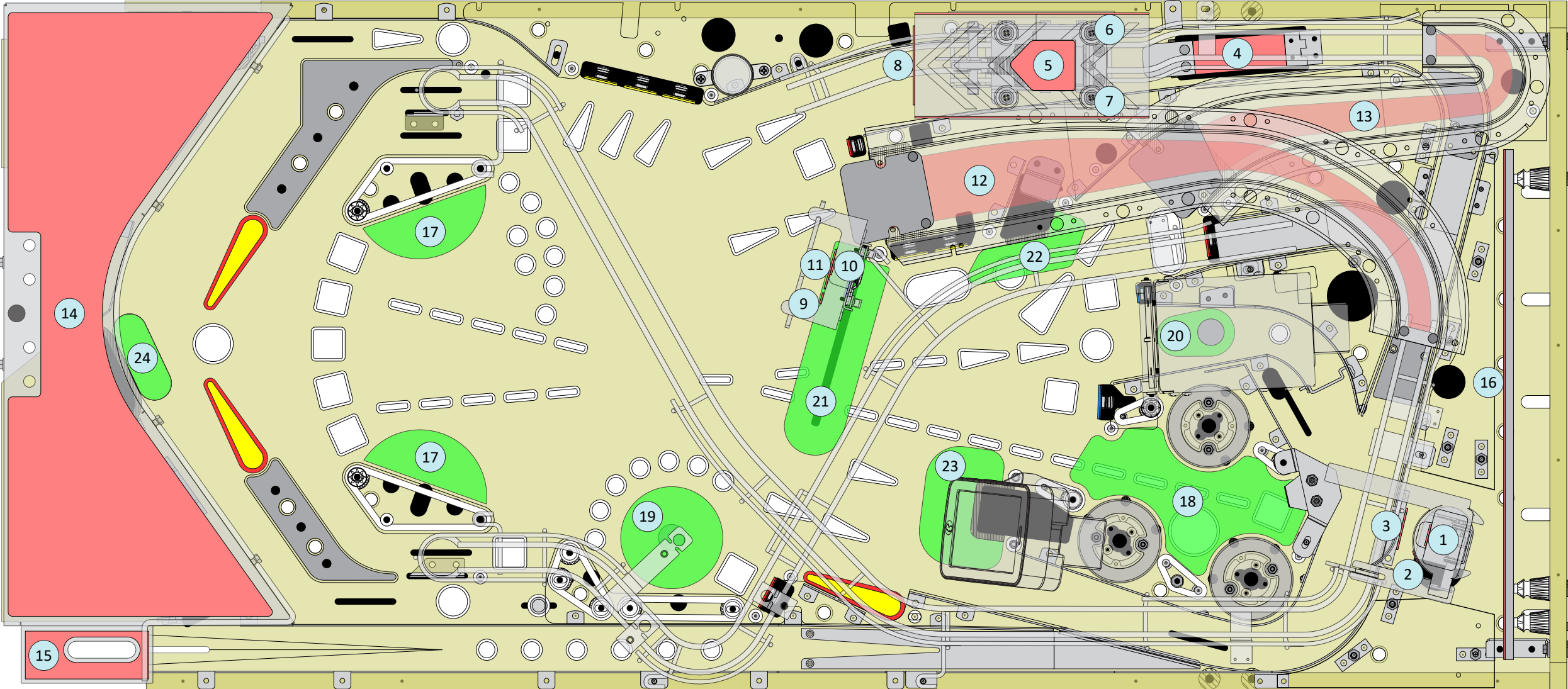
Item	Part Number	Description	Qty
1	30-003008-17	DI Bottom Arch Lights Mtg Clear Plastic (under arch)	1
2	30-003008-18	DI Pop Bumper Light Mtg Clear Plastic	3
3	30-003008-24	DI Betty, Right Side Clear Plastic	1
4	30-003008-29	DI Betty, Left Side Clear Plastic	1
5	30-003008-32	DI Betty's Wrench Clear Plastic	1
6	30-003008-36	DI QUANTUM CITY SEWER Clear Plastic	1
7	30-004000-00	DI Mini Playfield, Clear, Lexan	1
8	30-000113-00	DI Cityscape Back Panel, Acrylic	1
or	05-009005-10	DI Cityscape Back Panel, Masonite (Std games)	1
9	30-000116-00	DI QED Figure Lightning Bolt, Yellow Acrylic	1
10	30-000007-13	Pop Bumper Cap, Starburst, Clear	3
11	30-000089-13	Flasher Dome w/Tabs, Clear	1
12	30-000012-04	Flipper Bat, Yellow	3
13	30-000122-00	DI Left Ramp Exit Wire Ramp Cover	1
14	30-000084-00	Nylon Moving Target Bearing Strip (under PF)	1
15	30-000110-01	Trap Door Hinge Transition	1
16	30-000034-02	GI Light Rod, Acrylic, 1.34" (under PF plastics)	27



# Playfield Sculptures/Toys

Item	Part Number	Description
1	32-000042-00	DI Robot Betty Sculpture, Body
	32-000042-01	DI Robot Betty Sculpture, Left Arm
2	32-000041-01	DI STATION 3 Building Sculpture, 2/17
3	25-007000-00	DI Rubber Spider Toy
4	32-000040-00	DI Moving Tgt QED Sculpture
5	52-000057-00	DI Quadcopter Drone Assy (3 ea)

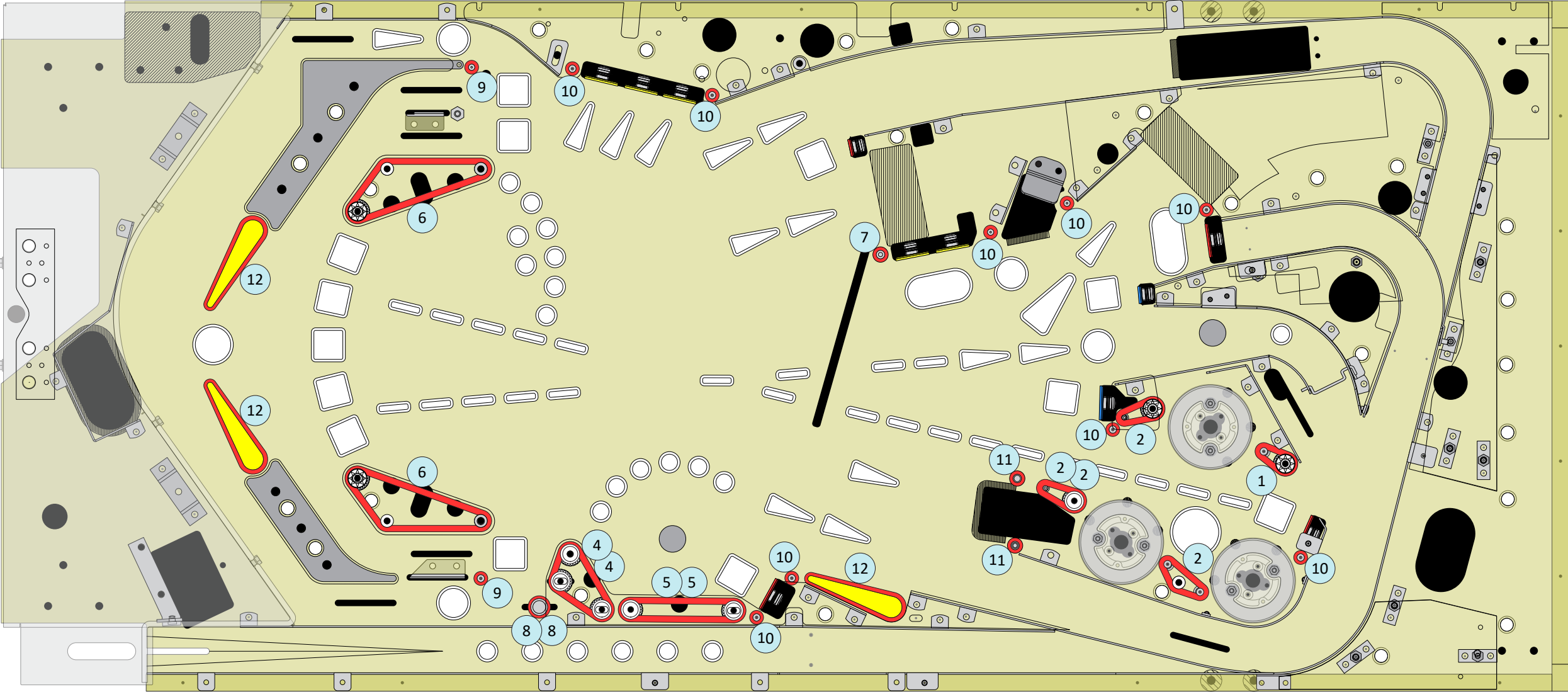


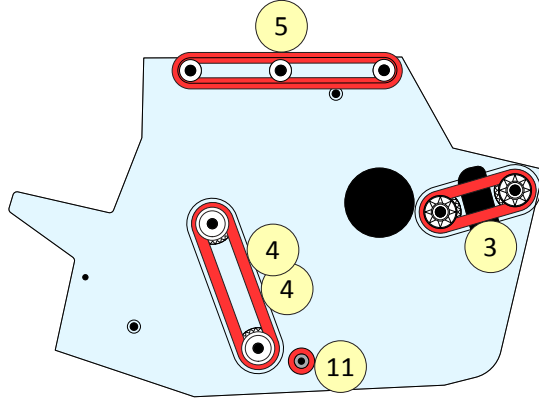




## Game Decals & Mylar Playfield Protectors

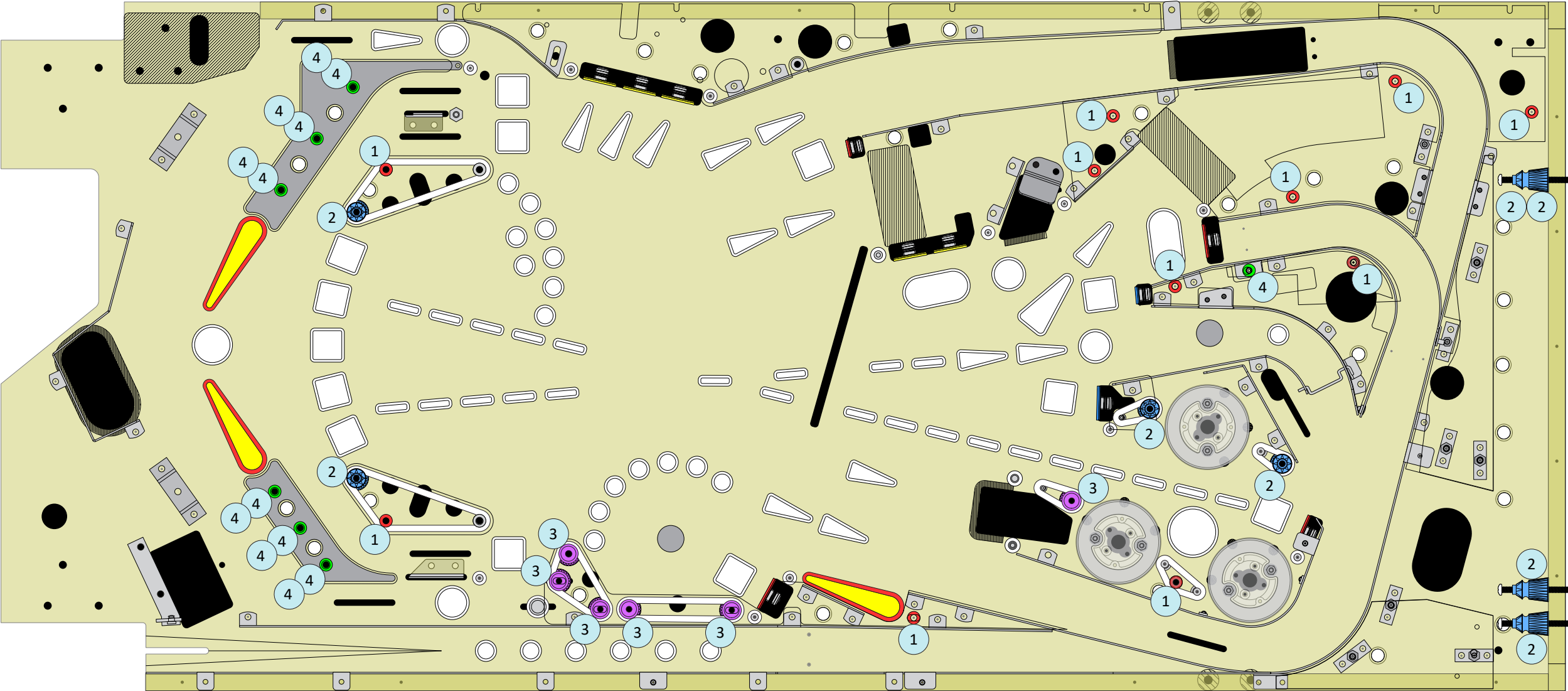
Item	Part Number	Description	Part of Assy	Drawing
1	62-000027-04	DI Betty Quantum Mechanics Hat Decal	52-000056-10	C-60
2	62-000027-03	DI Betty Lapel Decal	52-000056-10	C-60
3	62-000027-05	DI Betty Ball Trap Prevent Decal	-	-
4	62-000029-03	DI Trap Door/PROPERTY OF BOB Decal	51-000082-10	C-36
5	62-000033-05	DI STATION 3 Decal, Top	52-000054-00	C-58
6	62-000033-02	DI STATION 3 Decal, Left Side	52-000054-00	C-58
7	62-000033-03	DI STATION 3 Decal, Right Side	52-000054-00	C-58
8	62-000033-04	DI STATION 3 Decal, Front	52-000054-00	C-58
9	62-000027-00	DI QED Lapel Decal	51-000081-20	C-32
10	62-000027-01	DI QED Hat Decal	51-000081-00	C-32
11	62-000027-02	DI QED Quantum Electric Co. Shirt Decal	51-000081-00	C-32
12	62-000029-01	DI Left Ramp/STATION 1 Decal	52-000050-X0	C-54
13	62-000029-02	DI Upper Left Ramp/STATION 3 Decal	52-000051-X0	C-56
14	62-000030-00	DI Bottom Arch Decal	52-000060-0X	C-62
15	62-000030-01	DI Shooter Gauge Decal	52-000060-0X	C-62
16 Std	62-000032-00	DI Cityscape Back Panel Decal, Std	-	-
NS	62-000033-01	DI Coin Door Decal	40-000006-20	-
NS	62-000030-02	DI Cabinet Headphone Jack Decal	51-000064-00	C-27
17	62-000031-00	DI Clear Mylar Slingshot Area Protector (2 ea)	-	-
18	62-000031-01	DI Clear Mylar Pop Bumper Area Protector	-	-
19	62-000031-02	DI Clear Mylar Drone Magnet Area Protector	-	-
20	62-000031-03	DI Clear Mylar Theater Magnet Area Protector	-	-
21	62-000031-04	DI Clear Mylar Moving Target Slot Protector	-	-
22	62-000035-00	DI Clear Mylar SIM Card Shot Protector	-	-
23	62-000035-01	DI Clear Mylar Smartphone Shot Protector	-	-
24	62-000035-02	DI Clear Mylar Outhole Area Protector	-	-

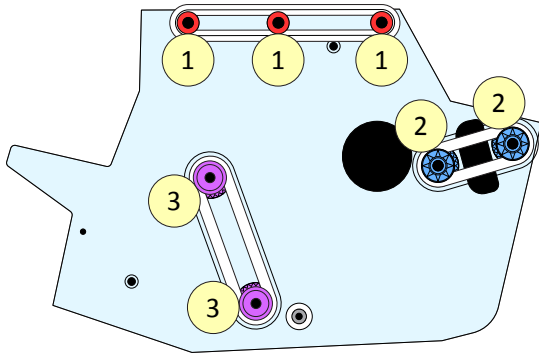




## Rubber Rings, Bumpers & Sleeves

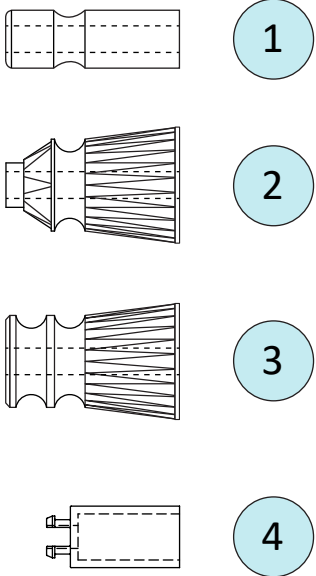
Item	Part Number	Description	Qty
1	25-002004-08-9	Silicone Ring, 1/2", White	1
2	25-002004-12-9	Silicone Ring, 3/4", White	4
3	25-002004-16-9	Silicone Ring, 1", White	1
4	25-002004-20-9	Silicone Ring, 1-1/4", White	4
5	25-002004-24-9	Silicone Ring, 1-1/2", White	3
6	25-002004-40-9	Silicone Ring, 2-1/2", White	2
7	25-006002-00	Post Rubber Sleeve, 1-1/16", Black	1
8	25-006005-03-9	3/16" ID Post Silicone, White	2
9	25-006005-06-9	3/8" OD Mini Post Silicone, White	2
10	25-006005-07-9	7/16" OD Mini Post Silicone, White	9
11	25-006012-09	Post Polyurethane Sleeve, 1-1/16", White	3
12	25-002001-02	Flipper Rubber Ring, 1-1/2", Red	3



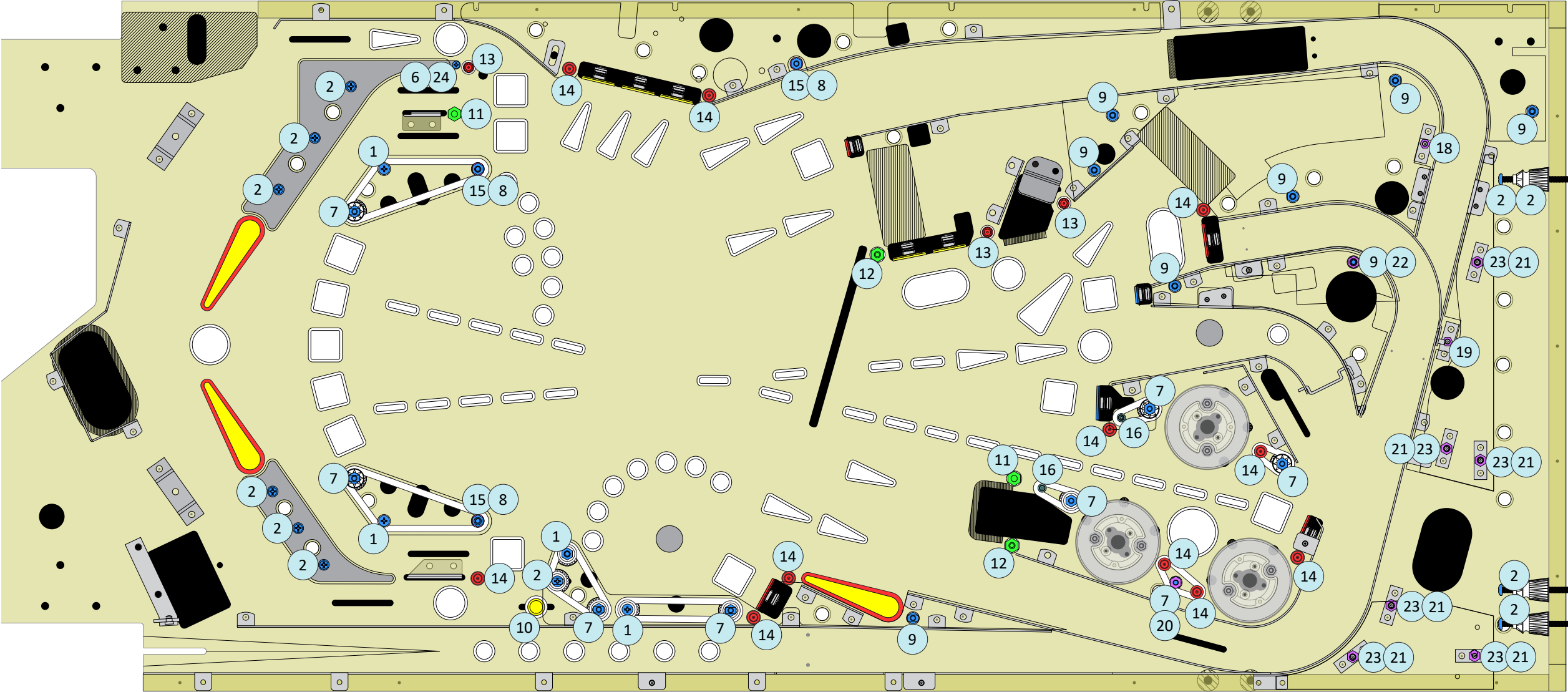


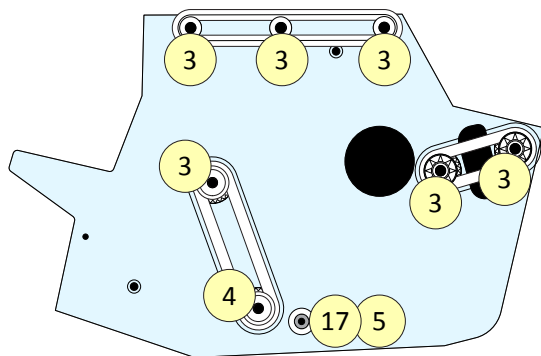
## Plastic Playfield Posts & Supports

Item	Part Number	Description	Qty
1	30-009004-13	1-1/16" Standard Poly Post, Clear	14
2	30-009005-13	Single Star Poly Post, Clear	12
3	30-009008-13	Double Star Poly Post, Clear	8
4	30-000083-04	#8 Nylon Round Spacer, Snap-In, Black, 0.666"	13



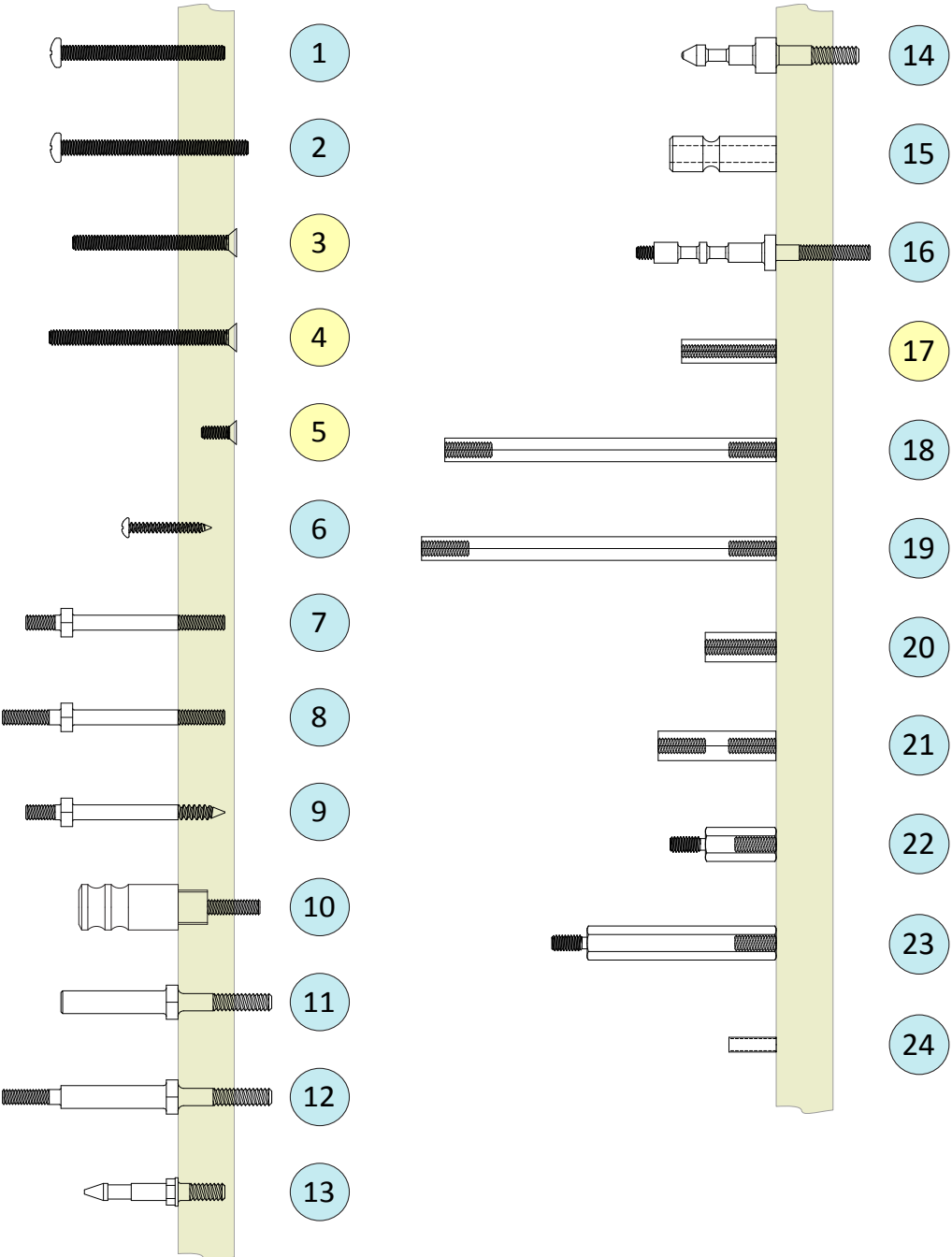


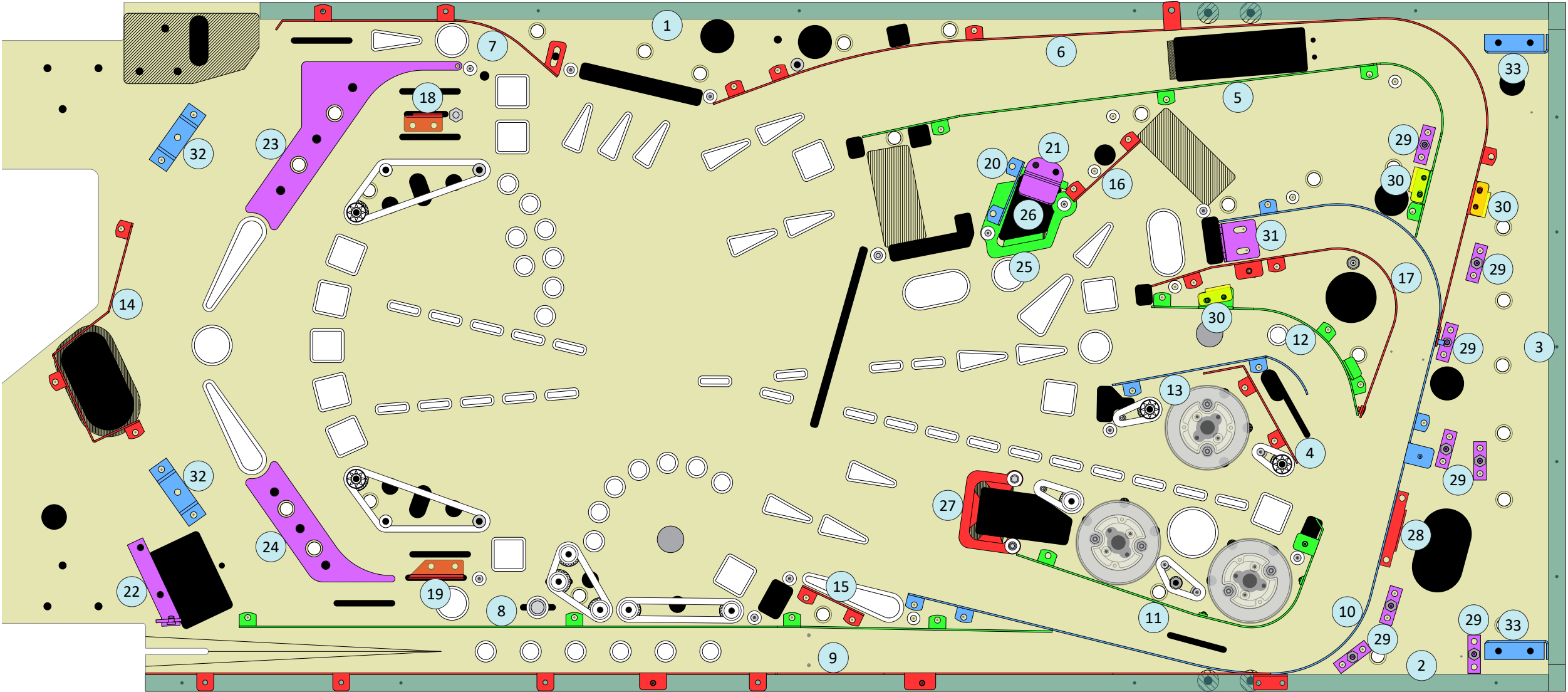




# Metal Playfield Posts, Screws & Hex Spacers

Item	Part Number	Description	Qty
1	80-000008-28	8-32 x 1-3/4" PPH MS	4
2	80-000008-32	8-32 x 2" PPH MS	11
3	80-006008-28	8-32 x 1-3/4" PFH MS	6
4	80-006008-32	8-32 x 2" PFH MS	1
5	80-006106-06	6-32 x 3/8" PFH MS, Black	1
6	82-000004-14	#4 x 7/8" PPH SMS	1
7	97-000008-00	8-32/8-32 Butyrate Fastener Post, 2-1/8"	8
8	97-000008-01	8-32/8-32 Ramp Fastener Post, 2-3/8"	3
9	97-000008-02	8-32/WS Butyrate Fastener Post, 2-1/8"	8
10	97-000008-04	8-32 Steel Adjusting Post, Dual Rubber, 1/2" Diam	1
11	97-000009-00	5/16" Hex Sleeve Post, 2-1/4"	2
12	97-000009-02	5/16" Hex Sleeve Ramp Fastener Post, 2-7/8"	2
13	97-000010-01	Steel Mini Post, 10-32, 1-1/2"	3
14	97-000011-00	Steel Mini Post, 10-32, 1-7/8", Round Base	11
15	97-000100-01	Steel Standard Post, 1-3/16"	3
16	97-000102-00	Steel Bumper Post, Dual Rubber, 8-32/8-32	2
17	94-001406-16	1/4" x 1" Hex Spacer, F-F, 6-32, Zinc	1
18	94-000408-56	1/4" x 3-1/2" Hex Spacer, F-F, 8-32 Thread, Black	1
19	94-000408-60	1/4" x 3-3/4" Hex Spacer, F-F, 8-32 Thread, Black	1
20	95-001508-12	5/16" x 3/4" Hex Spacer, F-F, 8-32	1
21	95-001508-20	5/16" x 1-1/4" Hex Spacer, F-F, 8-32	6
22	95-001518-12	5/16" x 3/4" Hex Spacer, M-F, 8-32	1
23	95-001518-32	5/16" x 2" Hex Spacer, M-F, 8-32	6
24	94-003204-08	#4 x 1/2" Round Spacer, 0.16"OD, Alum	1

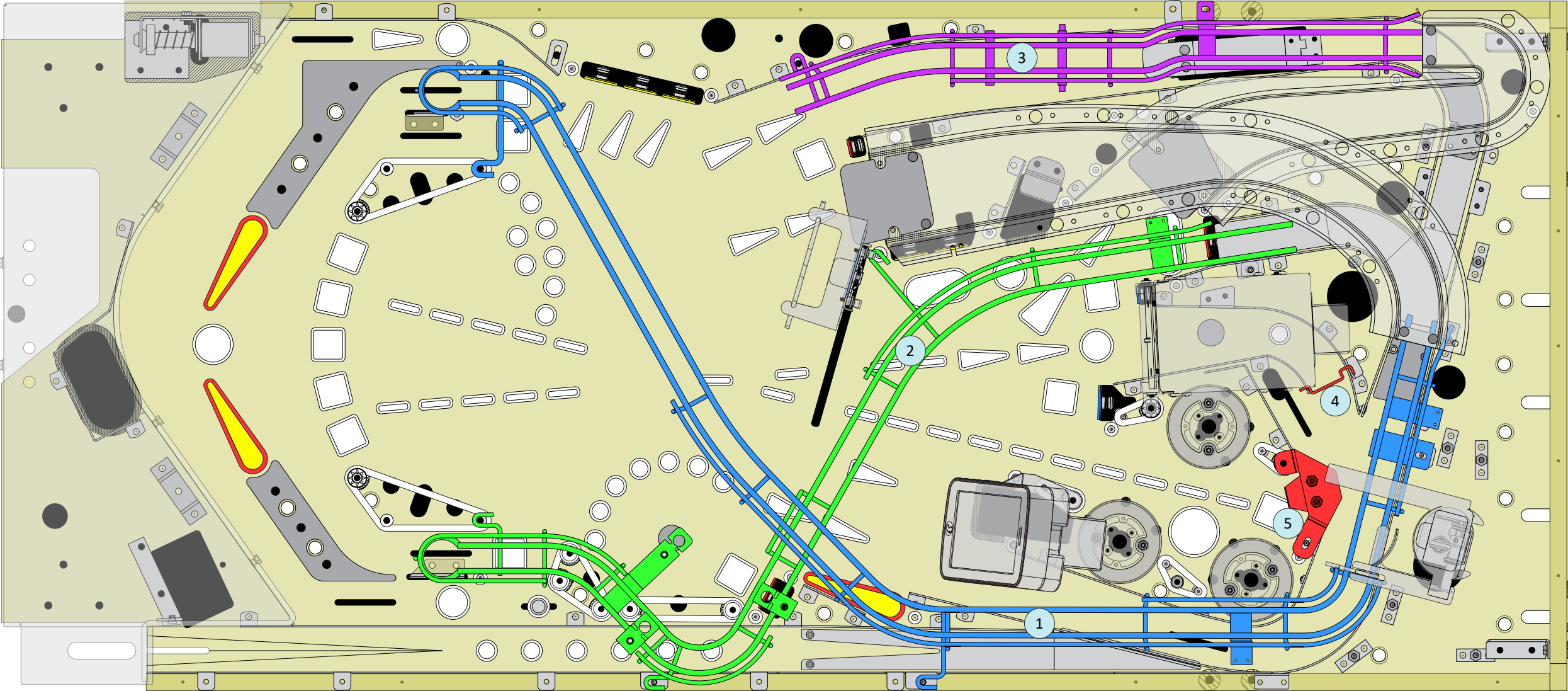




## Woodrails, Flatrails, Brackets & Ball Deflectors

Item	Part Number	Description	Qty
1	05-008001-05	Playfield Woodrail w/Black Vinyl Cover, 41.25"	1
2	05-008001-06	Playfield Woodrail w/Black Vinyl Cover, 37.9"	1
3	05-009005-00	DI Back Panel Wood	1
4	12-000039-00	DI Skill Shot Kicker Flatrail	1
5	12-000039-01	DI Left Orbit, Inner Flatrail	1
6	12-000039-02	DI Left Orbit, Outer Flatrail	1
7	12-000039-03	DI Left Outlane Flatrail	1
8	12-000039-04	DI Inner Shooter Lane Flatrail	1
9	12-000039-05	DI Outer Shooter Lane Flatrail	1
10	12-000039-06	DI Right Orbit/Loop, Outer Flatrail	1
11	12-000039-07	DI Right Orbit/Loop, Inner Flatrail	1
12	12-000039-08	DI Left Theater Flatrail	1
13	12-000039-09	DI Right Theater Flatrail	1
14	12-000039-10	DI Ball Outhole Flatrail	1
15	12-000039-11	DI Upper Flipper Flatrail	1
16	12-000039-12	DI Upper Left Ramp Entrance Flatrail	1
17	12-000039-13	DI Wire Ramp Entrance Flatrail	1
18	12-000039-14	DI Lane Divider Flatrail, 0.88"	1
19	12-000039-15	DI Lane Divider Flatrail, 1.62"	1
20	12-000039-16	DI SIM Card Scoop Feed Flatrail	1
21	10-003001-03	Snubber Brkt, Low Profile	1
22	10-000111-00	Ball Stop Brkt	1
23	10-000221-00	DI Return Lane Plate, Left	1
24	10-000221-01	DI Return Lane Plate, Right	1
25	10-003500-11	DI SIM Card Scoop CPP PF Protector, Front	1
26	10-003500-12	DI SIM Card Scoop CPP PF Protector, Back	1
27	10-003500-10	DI Smartphone Scoop CPP PF Protector	1
28	10-000220-07	Robot Betty Ball Trap Prevent Brkt	1
29	10-000061-08	Single PEM Plate, 8-32, Black	8
30	10-000178-10	Flatrail Single Opto Mtg Brkt (on flatrail tab)	3
31	10-000233-00	DI Drone Wire Ramp Support Brkt	1
32	10-000215-00	Bottom Arch Hold Brkt	2
33	10-000162-00	Back Panel Support Brkt	2

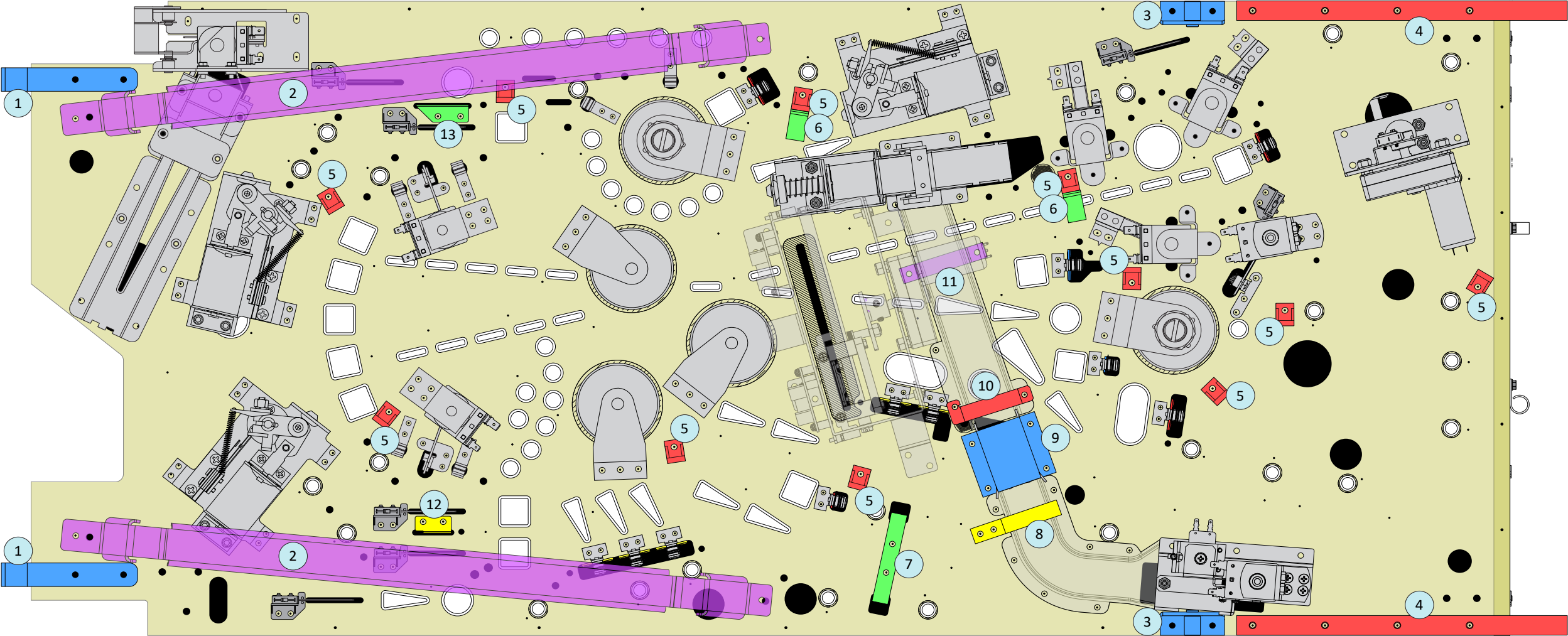






## Wire Ramps & Ball Gates

Item	Part Number	Description
1	13-000011-00	DI Left Ramp Exit Wire Ramp
2	13-000013-00	DI Drone Wire Ramp
3	13-000012-00	DI 3-Ball Lock Wire Ramp
4	13-003022-10	One Way Gate Wireform, 1.61", Low Profile
5	51-000085-00	Flap Gate Assembly (Details: C-36)



# Under-Playfield Supports & Brackets

Item	Part Number	Description	Qty
1	10-000014-00	Playfield Hanger Brkt	2
2	10-000223-00	Playfield Support Brkt, 21" L, 9.82" H	2
3	11-007001-10	Playfield Hinge Brkt Assy, 6/16	2
4	10-000013-01	Playfield Lift Support Brkt, 10.3"	2
5	30-000033-01	Nylon Cable Ladder, 3.5"	11
6	30-000049-16	Nylon Cable Clamp, Open, 1"	2
7	10-000232-00	Opto Pair Mtg Brkt, Through-Playfield	1
8	10-000225-00	Trap Door Subway Opto Brkt	1
9	10-000222-00	Subway Union Brkt	1
10	10-000214-00	Ball Scoop Subway Opto Brkt	1
11	10-000214-01	Ball Scoop Subway Support Brkt	1
12	12-000039-14	DI Lane Divider Flatrail, 0.88"	1
13	12-000039-15	DI Lane Divider Flatrail, 1.62"	1

Assembly Mounting Hardware

Assembly				Mounting Hardware		
Part Number	Name	Mounts To	Drawing	Part Number	Description	Qty
10-000234-00	Backbox Vent Hole Cover, Louvered					
10-000110-01	Fan Guard, 4.69"					
51-006013-00	Backbox Fan & Cable Assy	Backbox, Through	C-4	80-000108-32	8-32 x 2" PPH MS, Black	4
				91-000008-00	8-32 Nylon Stop Nut	4
				92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	4
51-005043-00	27" LCD Pivot/Swing Assy	Backbox, Through	C-4	80-002025-12	1/4-20 x 3/4" HWH Phillips MS, Serrated	3
51-005032-10	27" LCD Monitor Assy, Backbox PCBs	51-005043-00 Assy	C-4	91-002025-00	1/4-20 Flange Nut	4
42-005002-00	Roto-Lock Receptacle	Backbox, Through	C-4	91-000011-00	10-24 Nylon Nut	2
				92-000010-00	#10 Flat Washer, 0.226" ID, 0.507" OD	2
				81-005011-28	10-24 x 1-3/4" Black Carriage Bolt	2
51-000032-01	Knocker Assy, Vertical	Backbox, Interior	C-4	82-002008-08	#8 x 1/2" HWH Phillips SMS	5
51-005053-00	Backbox Speaker Bar Assy, Wood	Backbox, Interior Brkts	C-4	80-008108-16	8-32 x 1" TP Torx MS, Black	2
				92-000108-00	#8 Flat Washer, Black	2
51-005041-00	USB Camera Assy	Backbox, Interior	C-4	82-002008-08	#8 x 1/2" HWH Phillips SMS	2
51-005044-02	Backbox Mount Solid State Drive Assy, 60GB	Backbox, Interior	C-4	82-002006-08	#6 x 1/2" HWH Phillips SMS	4
51-005048-00	Flasher Topper Assy (Std only)	Backbox, Top	C-4	82-002008-08	#8 x 1/2" HWH Phillips SMS	2
51-005050-00	DI Backbox Topper Assy (CE only)	Backbox, Top	C-4	82-008108-10	#8 x 5/8" TP T-20 Torx SMS, Black	2
				91-002010-00	10-32 Flange Nut	1
42-005001-00	Roto-Lock Latch	Cabinet, Through	C-2	91-000011-00	10-24 Nylon Stop Nut	2
				92-000010-00	#10 Flat Washer, 0.226" ID, 0.507" OD	2
				81-005011-28	10-24 x 1-3/4" Carriage Bolt, Black	2
51-005023-00	Line Filter Box Assy	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	4
10-000003-01	Cabinet Vent Hole Grill, 3" (2)	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	8
10-000010-01	Line Cord Cover Plate, No Cutout	Cabinet, Exterior	C-2	80-002008-16	8-32 x 1" HWH Phillips MS, Serrated	2
10-000006-00	Cabinet Leg Mtg Brkt (4)	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	24
10-000133-00	Cabinet Leg Brkt, Decal Protector (4)	Cabinet, Exterior	C-2	82-006006-08	#6 x 1/2" PFH SMS	8
10-000031-01	Cabinet Leg Assy, 30.5", Chrome (4)	Cabinet, Through	C-2	90-008038-40	Leg Bolt, Acorn Head, 3/8-16 x 2-3/4"	8
10-000031-0#	Cabinet Leg Assy, 30.5" (Powder Coated, 4)	Cabinet, Through	C-2	90-008038-40-0	Leg Bolt, Acorn Head, 3/8-16 x 2-3/4", Black	8
16-005000-02	Main Transformer, 2/16	Cabinet, Through	C-2	80-002025-10	1/4-20 x 5/8" HWH Phillips MS, Serrated	4
				91-004025-00	1/4-20 T-Nut, 1/2" Diameter	4
18-000005-01	Flipper Switch, Double Contact (Right)	Cabinet, Interior	C-2	10-000022-01	Curved Switch Plate	1
				82-002006-20	#6 x 1-1/4" HWH SMS	2
18-000005-00	Flipper Switch, Single Contact (Left)	Cabinet, Interior	C-2	10-000022-01	Curved Switch Plate	1
				82-002006-20	#6 x 1-1/4" HWH SMS	2

Assembly				Mounting Hardware		
Part Number	Name	Mounts To	Drawing	Part Number	Description	Qty
51-005001-01	Power Box Assy, Front Outlet	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	8
51-005027-01	Shaker Motor Assy	Cabinet, Interior	C-2	80-002008-10	8-32 x 5/8" HWH Phillips MS, Serrated	4
				91-004008-00	8-32 T-Nut, 1/2" Diameter	4
51-000028-00	Plumb Bob Tilt Assy	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	4
51-000087-0X	Ball Shooter Assy (all finishes)	Cabinet, Through	C-2	80-002010-08	10-32 x 1/2" HWH Phillips MS, Serrated	3
51-000035-00	Door & Interlock Switch Assy	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	2
40-00006-20	USA Coin Door Assy					
40-000011-74	European Coin Door Assy	Cabinet, Through	C-2	81-005125-20	1/4-20 x 1-1/4" Carriage Bolt, Black	4
				91-002025-00	1/4-20 flange Nut	4
10-000026-00	Cashbox Lock Brkt	Cabinet, Through	C-2	80-002010-08	10-32 x 1/2" HWH Phillips MS, Serrated	2
51-000064-00	Cabinet Headphone Jack Assy	Cabinet, Through	C-2	92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	4
				91-000008-00	8-32 Nylon Stop Nut	4
10-000033-0#	PF Support/Slide Brkt (2)	Cabinet, Interior	C-2	80-002010-08	10-32 x 1/2" HWH Phillips MS, Serrated	8
				91-005010-00	10-32 Hex Drive Flanged Insert	8
10-008001-10	Lockdown Bar Receiver Assy	Cabinet, Through	C-2	81-005125-20	1/4-20 x 1-1/4" Carriage Bolt, Black	2
				91-002025-00	1/4-20 flange Nut	2
42-007003-##	Cabinet Side Rail (2)	Cabinet, Through	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	2
				81-005108-16	8-32 x 1" Carriage Bolt, Black	4
				92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	2
				91-001008-00	8-32 Keps Nut	4
51-005001-01	Power Box Assy, Front Outlet	Cabinet, Interior	C-2	82-002008-08	#8 x 1/2" HWH Phillips SMS	8
17-006004-00	Subwoofer Speaker, 8", 8Ω, 40W	Cabinet, Interior	C-2	80-002008-16	8-32 x 1" HWH Phillips MS, Serrated	4
				91-004008-00	8-32 T-Nut, 1/2" Diameter	4
				80-002008-06	8-32 x 3/8" HWH Phillips MS, Serrated	1
05-008001-0#	Playfield Woodrails (2)	Playfield, Top	C-122	82-006006-20	#6 x 1-1/4" PFH SMS	11
12-000039-##	Playfield Flatrails (15)	Playfield, Top	C-122	82-002008-08	#8 x 1/2" HWH Phillips SMS	35
				92-000006-00	#6 Flat Washer, 0.141" ID, 0.437" OD	2
				91-000006-00	6-32 Nylon Stop Nut	2
				92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	2
				91-000008-00	8-32 Nylon Stop Nut	2
				82-007006-08	#6 x 1/2" TH Phillips SMS	9
				80-002008-10	8-32 x 5/8" HWH Phillips MS, Serrated	1
12-000039-14, -15	Playfield Flatrails (2)	Playfield, Through	C-122	82-002008-08	#8 x 1/2" HWH Phillips SMS	4
13-002006-00	DI Left Ramp Exit Wire Ramp Assy	Playfield, Top	C-124	92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	3
				91-000008-00	8-32 Nylon Stop Nut	2
				91-000006-00	6-32 Nylon Stop Nut	1



Assembly				Mounting Hardware		
Part Number	Name	Mounts To	Drawing	Part Number	Description	Qty
13-002005-00	DI Drone Wire Ramp Assy	Playfield, Top	C-124	92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	5
10-009002-00	DI Shooter Lane Steel Ramp	Playfield, Top	C-6	91-000008-00	8-32 Nylon Stop Nut	3
52-000047-00	DI Back Panel Assy	Playfield, Top	C-6	82-006104-08	#4 x 1/2" PFH SMS, Black	2
52-000050-#0	DI Left Ramp Assy	Playfield, Top	C-6	80-002008-10	8-32 x 5/8" HWH Phillips MS, Serrated	4
52-000051-#0	DI Upper Left Ramp Assy	Playfield, Top	C-6	82-006006-20	#6 x 1-1/4" PFH SMS	5
52-000054-00	DI 3-Ball Lock Ramp Assy	Playfield, Top	C-6	82-006104-08	#4 x 1/2" PFH SMS, Black	2
				80-002008-06	32 x 3/8" HWH Phillips MS, Serrated	1
				82-006104-08	#4 x 1/2" PFH SMS, Black	2
				80-002008-06	8-32 x 3/8" HWH Phillips MS, Serrated	1
				82-007006-08	#6 x 1/2" TH Phillips SMS	1
				94-003014-00	1/4" x 1/2" Round Spacer, Nylon	1
				92-000008-00	#8 Flat Washer, 0.19" ID, 0.443" OD, 0.06" TH	2
				91-000008-00	8-32 Nylon Stop Nut	1
51-000084-00	3-Ball Lock Assy	13-000012-00 Ramp	C-58	80-002008-06	8-32 x 3/8" HWH Phillips MS, Serrated	2
52-000059-00	DI Left Side Playfield Plastic Assy	Playfield, Top	C-6	82-007006-08	#6 x 1/2" TH Phillips SMS	4
52-000060-0#	DI Bottom Arch Assembly	Playfield, Top	C-6	80-002008-08	8-32 x 1/2" HWH Phillips MS, Serrated	2
				10-000215-00	Bottom Arch Hold Brkt	2
				80-002008-08	8-32 x 1/2" HWH Phillips MS, Serrated	4
51-000081-20	Moving Tgt Sculpture Mtg Brkt Assy	51-000081-00 Assy	C-6	91-000008-00	8-32 Nylon Stop Nut	4
51-000106-949	Pop Bumper Top Assy, W/Y/W (3)	Playfield, Top	C-6	82-006006-14	#6 x 7/8" PFH SMS	6
11-005004-01	Pop Bumper Ring & Rod Assy (3)	Playfield, Through	C-6	91-000006-00	6-32 Nylon Stop Nut	6
30-000007-13	Pop Bumper Cap, Starburst, Clear	51-000106-949 Assy		82-000004-10	#4 x 5/8" PPH SMS	4
51-000025-00	Kickback Assy, Left Mount	Playfield, Top	C-6	82-002008-08	#8 x 1/2" HWH Phillips SMS	3
51-000085-00	Flap Gate Assy	Playfield, Top	C-6	91-000008-00	8-32 Nylon Stop Nut	2
52-000048-00	DI Quantum Theater Assy	Playfield, Top	C-6	82-002008-08	#8 x 1/2" HWH Phillips SMS	1
				91-000008-00	8-32 Nylon Stop Nut	1
52-000049-00	DI Smartphone Assy	Playfield, Top	C-6	91-000008-00	8-32 Nylon Stop Nut	1
				91-000006-00	6-32 Nylon Stop Nut	1
52-000062-00	DI Mini Playfield Assy	Playfield, Top	C-6	82-006004-16	#4 x 1" PFH SMS	2
52-000059-00	DI Left Side Playfield Plastic Assy	Playfield, Top	C-6	82-007006-08	#6 x 1/2" TH Phillips SMS	4
10-000233-00	DI Drone Wire Ramp Support Brkt	Playfield, Top	C-122	82-002008-08	#8 x 1/2" HWH Phillips SMS	2
10-000178-10	Flatrail Single Opto Mtg Brkt (3)	Flatrail Tabs	C-122	91-000006-00	6-32 Nylon Stop Nut	6
10-005037-00	DI Orbit Ramp Assy	Playfield, Top	C-6	82-006104-08	#4 x 1/2" PFH SMS, Black	2
52-000065-00	DI Right Wireform Steel Ramp Assy	Playfield, Top	C-6	82-006104-08	#4 x 1/2" PFH SMS, Black	2
10-003001-03	Snubber Brkt, Low Profile	Playfield, Top	C-122	80-002008-10	8-32 x 5/8" HWH Phillips MS, Serrated	2
51-000107-00	Playfield Bubble Level Assy	Playfield, Top	C-6	82-007006-08	#6 x 1/2" TH Phillips SMS	2

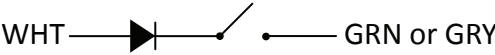
Assembly				Mounting Hardware		
Part Number	Name	Mounts To	Drawing	Part Number	Description	Qty
51-000001-14	Right Flipper Assy, Mod-UL (2)	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	12
51-000002-00	Left Flipper Assy	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	8
51-000003-00	Slingshot Assy, 23-800 (2)	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	22
51-000004-01	Pop Bumper Bottom Assy, 26-1200 (3)	Playfield, Under	C-8	91-000006-00	6-32 Nylon Stop Nut	9
				85-008006-20	6-32 x 1-1/4" Screw Nail, Fin Shank, Black	9
				82-002008-08	#8 x 1/2" HWH Phillips SMS	6
51-000021-00	5-Ball Trough Assy	Playfield, Under	C-8	80-002008-12	8-32 x 3/4" HWH Phillips MS, Serrated	4
				80-002008-16	8-32 x 1" HWH Phillips MS, Serrated	2
				82-002008-08	#8 x 1/2" HWH Phillips SMS	2
51-000026-00	Auto-Launch Assy	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	4
51-000024-00	Playfield Magnet Assy, Adj Core (2)	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	6
51-000024-01	Playfield Magnet Assy, Fixed Core (3)	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	9
51-000081-00	Moving Target Assy	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	5
30-000084-00	Nylon Moving Target Bearing Strip	Playfield, Under	C-110	82-006104-08	#4 x 1/2" PFH SMS, Black	6
51-000082-00	Trap Door Underside Assy	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	3
51-000082-10	Trap Door Surface Assy	Playfield, Through	C-6	91-000006-00	6-32 Nylon Stop Nut	2
				92-000006-00	#6 Flat Washer, 0.141" ID, 0.437" OD	2
51-000083-00	Ball Scoop Assy, Left Side Entrance	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	4
51-000086-00	Inline Kicker Assy	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	7
52-000056-00	DI Robot Assy	Playfield, Under	C-8	82-002008-08	#8 x 1/2" HWH Phillips SMS	4
30-000033-01	Nylon Cable Ladder, 3.5" (11)	Playfield Under	C-126	82-002008-08	#8 x 1/2" HWH Phillips SMS	11
10-000013-01	Playfield Lift Support Brkt, 10.3"	Playfield, Under	C-126	82-006104-08	#4 x 1/2" PFH SMS, Black	4
10-000014-00	Playfield Hanger Brkt (2)	Playfield, Under	C-126	80-002008-12	8-32 x 3/4" HWH Phillips MS, Serrated	4
10-000223-00	Playfield Support Brkt, 21" L, 9.82" H (2)	Playfield, Under	C-126	80-002008-12	8-32 x 3/4" HWH Phillips MS, Serrated	3
				82-002008-08	#8 x 1/2" HWH Phillips SMS	3
11-007001-10	Playfield Hinge Brkt Assy, 6/16 (2)	Playfield, Under	C-126	80-002008-10	8-32 x 5/8" HWH Phillips MS, Serrated	4
15-000009-00	Motor Relay Bd	Playfield Under	C-78	82-000004-14	#4 x 7/8" PPH SMS	4
15-000053-1X	Main RGB LED Board (8)	Playfield, Under	C-78	82-000004-08	#4 x 1/2" PPH SMS	36
15-004128-04	Single RGB LED PCB Assy, T LED FP, 4V	Playfield, Under	C-78	82-000004-06	#4 x 3/8" PPH SMS	2
15-004127-07	GI LED PCB Assy, T/R LED FP, 7.5V (29)	Playfield, Under	C-78	82-000004-06	#4 x 3/8" PPH SMS	29
15-004031-02	RGB LED Cont PCB Assy, 2.5mm, w/Fer	Playfield Under	C-78	10-005035-00	RGB LED Controller/BAG PCB Mtg Brkt	1
				80-002104-06	4-40 x 3/8" HWH MS, Black	4
				82-002008-08	#8 x 1/2" HWH Phillips SMS	2
15-004033-02	BAG Cont PCB Assy, 2.5mm, w/Fer	Playfield Under	C-78	10-005035-00	RGB LED Controller/BAG PCB Mtg Brkt	1
				80-002104-06	4-40 x 3/8" HWH MS, Black	4
				82-002008-08	#8 x 1/2" HWH Phillips SMS	2

# Assembly Cables

Assembly		Cable	
Part Number	Name	Part Number	Description
51-005053-00	Backbox Speaker Bar Assy, Wood	19-003116-00	Speaker Bar Cable, Right
		19-003116-01	Speaker Bar Cable, Left
51-005032-10	27" LCD Monitor Assy, Backbox PCBs	19-003112-06	DVI-D Cable, Shielded, M-M, 6ft
		19-003072-02	27" LCD Power Cable, Backbox PCBs
51-000032-01	Knocker Assy, Vertical	19-003104-01	Backbox Knocker Coil Cable, Backbox PCBs
51-005023-00	Line Filter Box Assy	19-009000-00	Line Power Cable, USA
51-005001-01	Power Box Assy, Front Outlet	19-009028-01	Power Box AC Input Cable, Backbox PCBs
17-006004-00	Subwoofer Speaker, 8", 8Ω, 40W	19-003024-02	RCA Mono Cable, 10ft
Various	RGB LED Boards	Various	See RGB LED Wiring, pg C-88
Various	GI & Flasher LED Boards	Various	See GI Lighting & Flasher Wiring, pg C-94
Various	Opto Switches	Various	See Opto Wiring, pg C-96
16-005000-02	Main Transformer, 2/16	19-009027-01	Transformer Secondary Cable, Backbox PCBs
51-000081-00	Moving Target Assy	19-009031-01	DI Moving Target Motor Cable
		19-009034-00	DI Moving Target Switch & LED Cable
		19-003091-00	Opto I/O Bd Switch Cable
51-000081-20	Moving Tgt Sculpture Mtg Brkt Assy	19-009034-01	Moving Target Switch Cable
		19-009034-02	Moving Target LED Cable
51-000083-00	Ball Scoop Assy, Left Side Entrance	19-003117-00	Ball Scoop Opto Pair Assy
51-000084-00	3-Ball Lock Assy	19-009031-03	DI 3-Ball Lock Coil Cable
51-000021-00	5-Ball Trough Assy	19-009019-00	5-Ball Trough Opto Bds Input Power Cable
		19-003090-00	5-Ball Trough Opto Switch Cable
51-005048-00	Flasher Topper Assy (Std only)	19-009031-04	Flasher Topper Internal Cable
		19-009031-05	DI Flasher Topper Extension Cable
51-005050-00	DI Backbox Topper Assy (CE only)	19-003123-01	Backbox Topper Extension Cable
		19-003123-02	Backbox Topper LED Strip Cable
52-000047-00	DI Back Panel Assy	19-003122-05	DI Back Panel Flasher Cable
52-000050-00	DI Left Ramp Assy	19-009032-02	DI Left Ramp Entrance Switch Cable
		19-009030-50	DI Left Ramp, Left Side RGB LED Cable
		19-009030-52	DI Left Ramp, Right Side/PF Sign RGB LED Cable (LE/CE games)
		19-009030-62	DI PF Sign RGB LED Cable (Std games)
52-000051-00	DI Upper Left Ramp Assy	19-009032-07	DI Upper Left Ramp Entrance Switch Cable
		19-009030-51	DI Upper Left Ramp/PF Sign/Left PB RGB LED Cable (LE/CE games)
		19-009030-61	DI PF Sign/Left PB RGB LED Cable (Std games)

Assembly		Cable	
Part Number	Name	Part Number	Description
52-000048-00	DI Quantum Theater Assy	19-003025-10L	VGA 15-pin Sub D Cable, Low Profile, 10ft
		19-003122-00	4.3" LCD Power Cable
		19-003121-00	Playfield 12V Power Cable (1st connector)
52-000049-00	DI Smartphone Assy	19-003128-05	4.3" LCD VGA Ribbon Cable, 5"
		19-009030-01	DI Smartphone RGB LED Cable
		19-003025-10L	VGA 15-pin Sub D Cable, Low Profile, 10ft
		19-003122-00	4.3" LCD Power Cable
		19-003121-00	Playfield 12V Power Cable (2nd connector)
52-000056-00	DI Robot Assy	19-009031-02	DI Robot Motor Cable
		19-009032-01	DI Robot Switch Cable
52-000057-00	DI Quadcopter Drone Assy	19-003121-20	DI Drone Power Cable
52-000059-00	DI Left Side Playfield Plastic Assy	19-009030-02	DI Beacon Flasher RGB LED Cable
		19-009030-53	Triple RGB LED Playfield Sign Cable
52-000060-0#	DI Bottom Arch Assy	19-009030-05	DI Bottom Arch RGB LED Cable
51-005045-00	Backbox Mount PCB Assy	19-003063-10	Backbox Fan/Lower Cabinet Y Power Cable
		19-003105-01	5/12V Y Power Cable, Backbox PCBs (2 ea)
		19-003100-02	USB Cable, 2.0 A to Mini-B, M-M, Shielded, 2.62ft
		19-003043-01	3.5mm Audio Cable, M-M, 3ft
50-005024-00	DI Lower Cabinet Assy	19-003059-10	USB Extension Cable, 3.0 A to A, M-F, 10ft
		19-009027-01	Transformer Secondary Cable, Backbox PCBs
		19-003063-10	Backbox Fan/Lower Cabinet Y Power Cable
		19-009017-10	DI Opto/Trough/VGA Splitter Power Cable
		19-005010-00	DI Main Playfield Harness
		19-005009-00	DI Lower Cabinet Harness
		19-009031-00	DI Coil/Dedicated Switch Harness
13-002005-00	DI Drone Wire Ramp Assy	19-009032-06	DI Drone Ramp Made Switch Cable
		19-003121-20	DI Drone Power Cable (3 ea)
13-002006-00	DI Left Ramp Exit Wire Ramp Assy	19-009032-03	DI Left Ramp Intermediate Switch Cable
		19-009032-04	DI Left Ramp Made Switch Cable

# Matrixed Switch Wiring Table



		Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8		Column 9		Column 10		Column 11		Column 12		Column 13		Column 14		Column 15		Column 16	
		J201-1		J201-2		J201-3		J201-4		J201-5		J201-6		J201-7		J201-9		J202-1		J202-2		J202-3		J202-4		J202-5		J202-6		J202-8		J202-9	
		GRN	BLK	GRN	BRN	GRN	RED	GRN	ORN	GRN	YEL	GRN	GRY	GRN	BLU	GRN	VIO	GRY	BLK	GRY	BRN	GRY	RED	GRY	ORN	GRY	YEL	GRY	GRN	GRY	BLU	GRY	VIO
Row 1 J200-1		1 5-Ball Trough #5 (left)		9 Moving Target Away (right)		17 Moving Target Home (left)		25 Left Slingshot, High		33 Right Slingshot, High		41 BOB Target		49 Left Pop Bumper		57 Betty Diverter Down		65		73		81		89		97		105		113		121	
WHT	BLK																																
Row 2 J200-2		2 5-Ball Trough #4		10		18 Left Orbit Enter		26 Left Slingshot, Low		34 Right Slingshot, Low		42 BOB Target		50 Right Pop Bumper		58 Theater Ticket Target, Left		66		74		82		90		98		106		114		122	
WHT	BRN																																
Row 3 J200-3		3 5-Ball Trough #3		11 Left Orbit Made		19 SIM Card Scoop Enter		27 Left Return Lane, Right		35 Right Return Lane		43 BOB Target		51 Lower Pop Bumper		59 TRAIN 1 Ramp Enter		67		75		83		91		99		107		115		123	
WHT	RED																																
Row 4 J200-4		4 5-Ball Trough #2		12 Phone Scoop Enter		20 Bob Trap Door Enter		28 Left Return Lane, Left		36 Shooter Lane		44 SPECIAL Outlane, Left		52 Right Orbit Enter		60 Upper Left Ramp Enter		68		76		84		92		100		108		116		124	
WHT	ORN																																
Row 5 J200-5		5 5-Ball Trough #1 (right)		13 Theater Enter		21 STATION 3 Lock #1 (front)		29 Bob Trap Door Open		37 SPECIAL Outlane, Right		45 Spider Target		53 Wrench Target		61		69		77		85		93		101		109		117		125	
WHT	YEL																																
Row 6 J200-6		6 5-Ball Trough Jam		14		22 STATION 3 Lock #2		30		38 Drone Rubber, Bottom		46 TRAIN 1 Ramp, Not Diverted		54 Theater Ticket Target, Right		62 TRAIN 1 Ramp Made		70		78		86		94		102		110		118		126	
WHT	GRN																																
Row 7 J200-7		7		15		23 STATION 3 Lock #3		31 Lite Big Bang, Low		39 Drone Rubber, Side		47 TRAIN 2 Ramp Made		55 BIG BANG Target		63		71		79		87		95		103		111		119		127	
WHT	BLU																																
Row 8 J200-8		8		16		24 STATION 3 Lock #4 (back)		32 Lite Big Bang, High		40 Drone Target		48 Moving Target Hit		56 Skill Shot Kicker		64		72		80		88		96		104		112		120		128	
WHT	VIO																																

 Opto Switches



# Dedicated Switch Wiring Table

Common	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 8	
	J601-7		J601-6		J601-5		J601-4		J601-2		J601-3		J601-8		J601-9	
	BLK	GRY	BLK	BRN	BLK	RED	BLK	ORN	BLK	YEL	BLK	GRN	BLK	BLU	BLK	VIO
J601-1	1 Left Flipper EOS		2 Right Flipper EOS		3 Upper Right Flipper EOS		4		5		6		7		8	
BLK																

Common	Return 9		Return 10		Return 11		Return 12		Return 13		Return 14		Return 15		Return 16	
	J602-7		J602-6		J602-5		J602-4		J602-2		J602-3		J602-8		J602-10	
	YEL	BLK	YEL	BRN	YEL	RED	YEL	ORN	YEL	GRY	YEL	GRN	YEL	BLU	YEL	VIO
J602-1	9 Left Flipper Switch		10		11 Right Flipper Switch, Lower		12 Right Flipper Switch, Upper		13 Enter/Menu Button		14 Up/Volume+ Button		15 Down/Volume- Button		16 Escape/Service Credit Button	
BLK																

Common	Return 17		Return 18		Return 19		Return 20		Return 21		Return 22		Return 23		Return 24	
	J603-7		J603-6		J603-5		J603-4		J603-2		J603-3		J603-9		J603-10	
	BLU	BLK	BLU	BRN	BLU	RED	BLU	ORN	BLU	YEL	BLU	GRN	BLU	GRY	BLU	VIO
J603-1	17 Left Coin Switch		18 Right Coin Switch		19 Center Dollar Bill Acceptor		20 4th Coin Slot Switch		21 5th Coin Slot Switch		22 Ticket Motor Notch Switch		23		24	
BLK																

Common	Return 25		Return 26		Return 27		Return 28		Return 29		Return 30		Return 31		Return 32	
	J604-8		J604-6		J604-5		J604-4		J604-2		J604-3		J604-9		J604-10	
	VIO	BLK	VIO	BRN	VIO	RED	VIO	ORN	VIO	YEL	VIO	GRN	VIO	BLU	VIO	GRY
J604-1	25 Start Button		26 Coin Door Open		27 Plumb Bob Tilt		28		29		30 Headphone Panel Volume Down		31 Headphone Panel Volume Up		32 Headphone Panel Jack Sense	
BLK																



# 20-Volt Coil Wiring Table

F703, 6.3A SB F710, 4A SB	Drive 49		Drive 50		Drive 51		Drive 52		Drive 53		Drive 54		Drive 55		Drive 56	
	<b>J110-2, Q421</b>		<b>J110-3, Q422</b>		<b>J110-5, Q423</b>		<b>J110-6, Q424</b>		<b>J110-7, Q425</b>		<b>J110-8, Q426</b>		<b>J110-9, Q427</b>		<b>J110-10, Q428</b>	
20V Power	PLM	BLK	PLM	BRN	PLM	RED	PLM	ORN	PLM	YEL	PLM	GRN	PLM	BLU	PLM	GRY
<b>J110-1</b>																
PLM																

F703, 6.3A SB F711, 4A SB	Drive 57		Drive 58		Drive 59		Drive 60		Drive 61		Drive 62		Drive 63		Drive 64	
	<b>J111-2, Q431</b>		<b>J111-4, Q432</b>		<b>J111-5, Q433</b>		<b>J111-6, Q434</b>		<b>J111-7, Q435</b>		<b>J111-8, Q436</b>		<b>J111-9, Q437</b>		<b>J111-10, Q438</b>	
20V Power	BLU	BLK	BLU	BRN	BLU	RED	BLU	ORN	BLU	YEL	BLU	GRN	BLU	GRY	BLU	VIO
<b>J111-1</b>	STATION 3 Lock Release		Left Slingshot		Right Slingshot											
BLU																

F703, 6.3A SB F712, 4A SB	Drive 65		Drive 66		Drive 67		Drive 68		Drive 69		Drive 70		Drive 71		Drive 72	
	<b>J112-3, Q501</b>		<b>J112-4, Q502</b>		<b>J112-5, Q503</b>		<b>J112-6, Q504</b>		<b>J112-7, Q505</b>		<b>J112-8, Q506</b>		<b>J112-9, Q507</b>		<b>J112-10, Q508</b>	
20V Power	VIO	BLK	VIO	BRN	VIO	RED	VIO	ORN	VIO	YEL	VIO	GRN	VIO	BLU	VIO	GRY
<b>J112-1</b>																
VIO																

# 12-Volt Motor & Light Wiring Table

F714, 4A SB F709, 3A SB	Drive 41		Drive 42		Drive 43		Drive 44		Drive 45		Drive 46		Drive 47		Drive 48	
	<b>J109-2, Q411</b>		<b>J109-3, Q412</b>		<b>J109-4, Q413</b>		<b>J109-6, Q414</b>		<b>J109-7, Q415</b>		<b>J109-8, Q416</b>		<b>J109-9, Q417</b>		<b>J109-10, Q418</b>	
12V Power	YEL	BLK	YEL	BRN	YEL	RED	YEL	ORN	YEL	GRY	YEL	GRN	YEL	BLU	YEL	VIO
<b>J109-1</b>	Moving Target Motor		Moving Target Relay				Betty Spotlight		Betty Diverter Motor		Top Drone Motor		Center Drone Motor		Bottom Drone Motor	
YEL																

F714, 4A SB F713, 2A SB	Drive 73		Drive 74		Drive 75		Drive 76		Drive 77		Drive 78		Drive 79		Drive 80	
	<b>J113-3, Q511</b>		<b>J113-4, Q512</b>		<b>J113-5, Q513</b>		<b>J113-6, Q514</b>		<b>J113-7, Q515</b>		<b>J113-8, Q516</b>		<b>J113-9, Q517</b>		<b>J113-10, Q518</b>	
12V Power	LT BLU	BLK	LT BLU	BRN	LT BLU	RED	LT BLU	ORN	LT BLU	YEL	LT BLU	GRN	LT BLU	GRY	LT BLU	VIO
<b>J113-2</b>	Shaker Motor		Topper Light (CE only)		Redemption Ticket Motor								Start Button Light		Flash Bulb Topper (Std only)	
LT BLU																



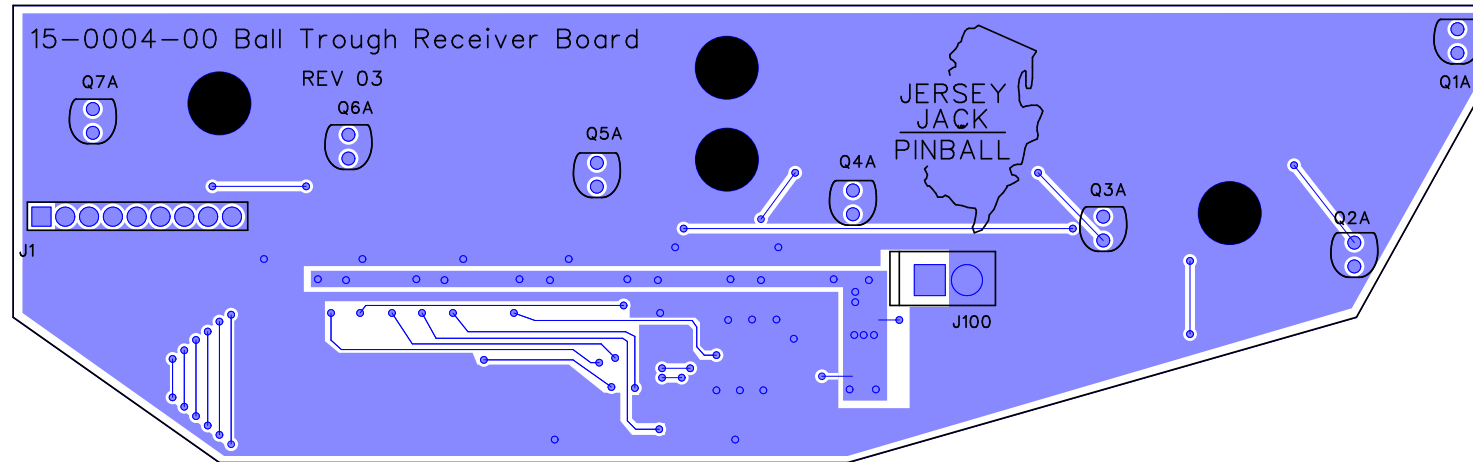


# Section D

## Reference Diagrams & Schematics



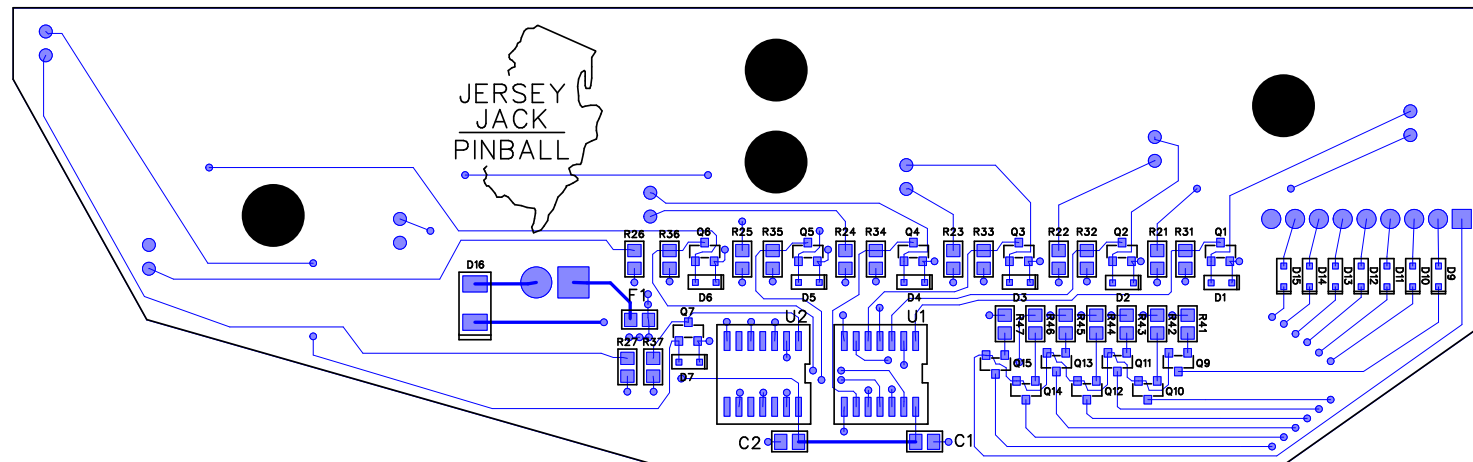




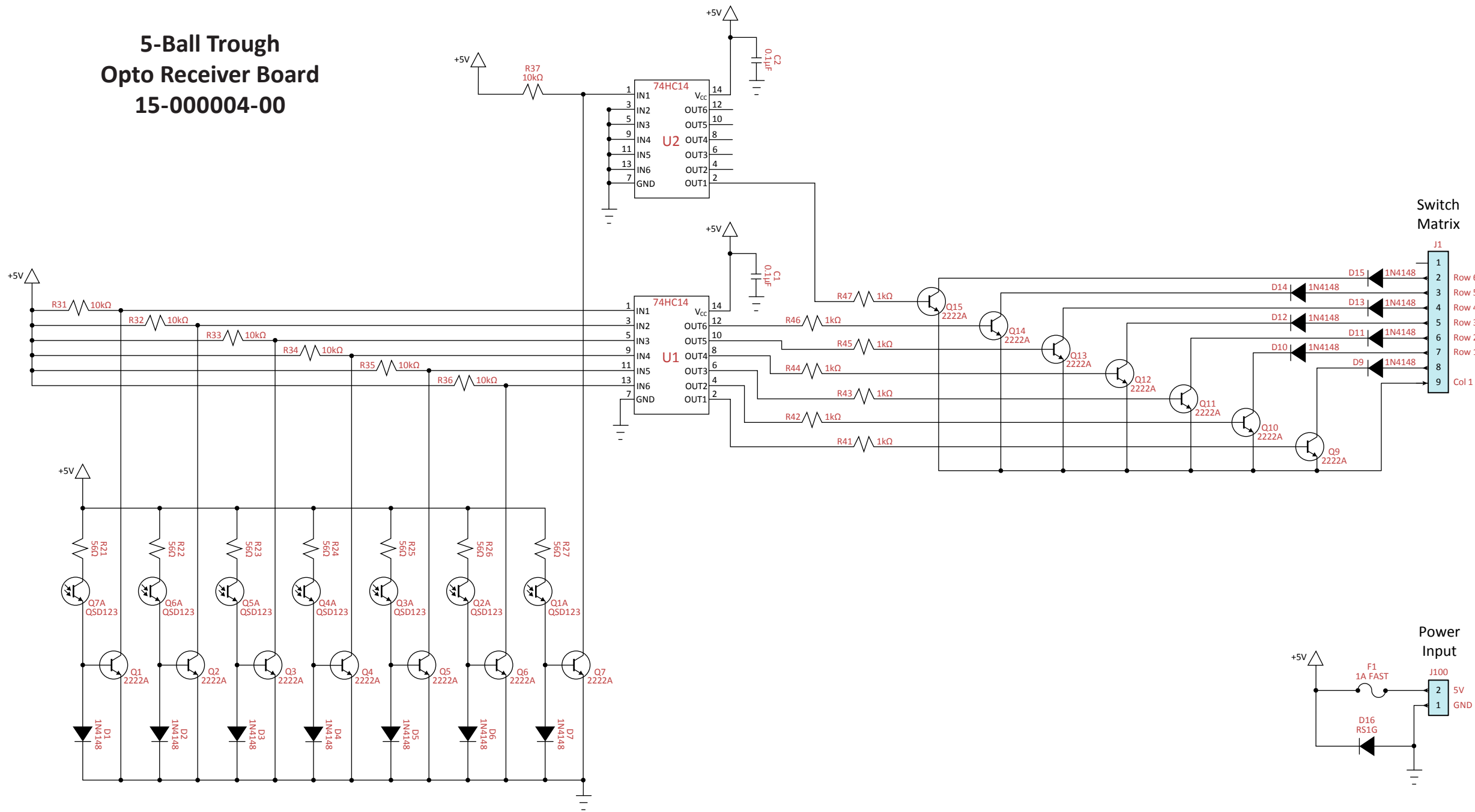
## 5-Ball Trough Opto Receiver Board

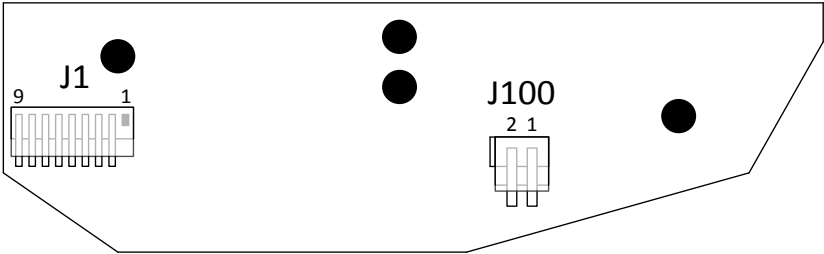
### 15-000004-00

Component(s)	Part Number	Description
C1, C2	100-104K-050	Capacitor, MLCC, 0805 SMT, 0.1μF, 50V, 10%
D1-D7, D9-D15	110-1000-0S	Diode, 1N4148, SMT, 75V, 300mA
D16	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F1	170-3201-FS	Fuse, Fast, 0805 SMT, 1A, 32V
Q1-Q7, Q9-Q15	131-0000-0S	Transistor, 2222A, SOT-23 SMT, NPN
Q1A-Q7A	24-0003-0T	Phototransistor, IR, QSD123, 880nm, 5mm
R21-R27	120-0056-254	Resistor, 0805 SMT, 56Ω, 0.25W, 5%
R31-R37	120-10K0-254	Resistor, 0805 SMT, 10kΩ, 0.25W, 5%
R41-R47	120-1K00-254	Resistor, 0805 SMT, 1kΩ, 0.25W, 5%
U1, U2	141-0000-0S	Hex Inverters, Schmitt Trigger, 74HC14, SOT-108 SMT
J100	31-2500-02	Header, Male, 2-pin, Rt Angle, 3.96mm
J1	31-2501-09	Header, Male, 9-pin, Rt Angle, 2.54mm



5-Ball Trough  
Opto Receiver Board  
15-000004-00





5-Ball Trough Opto Receiver Board  
15-000004-00  
Connector Pin-outs

**J1** *Matrixed Switches*

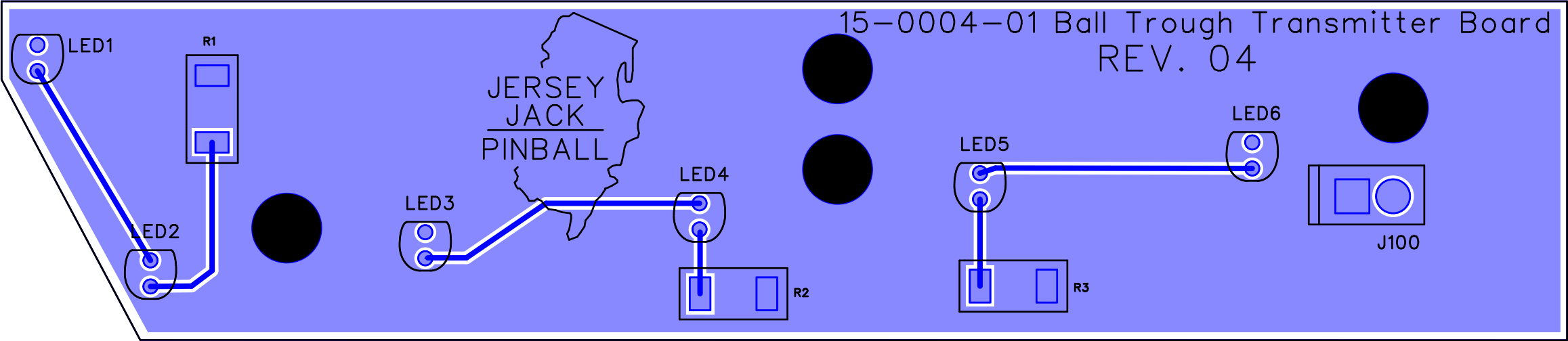
J1-1	GRN-BLK	Matrixed switches, Column 1 from I/O Board, J201-1
J1-2	Not Used	
J1-3	WHT-BLK	Matrixed switches, Row 1 from I/O Board, J200-1
J1-4	WHT-BRN	Matrixed switches, Row 2 from I/O Board J200-2
J1-5	WHT-RED	Matrixed switches, Row 3 from I/O Board J200-3
J1-6	WHT-ORN	Matrixed switches, Row 4 from I/O Board J200-4
J1-7	WHT-YEL	Matrixed switches, Row 5 from I/O Board J200-5
J1-8	WHT-GRN	Matrixed switches, Row 6 from I/O Board J200-6
J1-9	Key	

**J100** *Power Input*

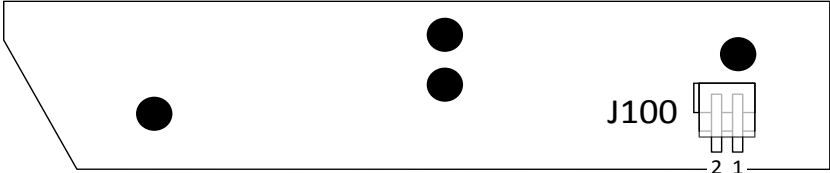
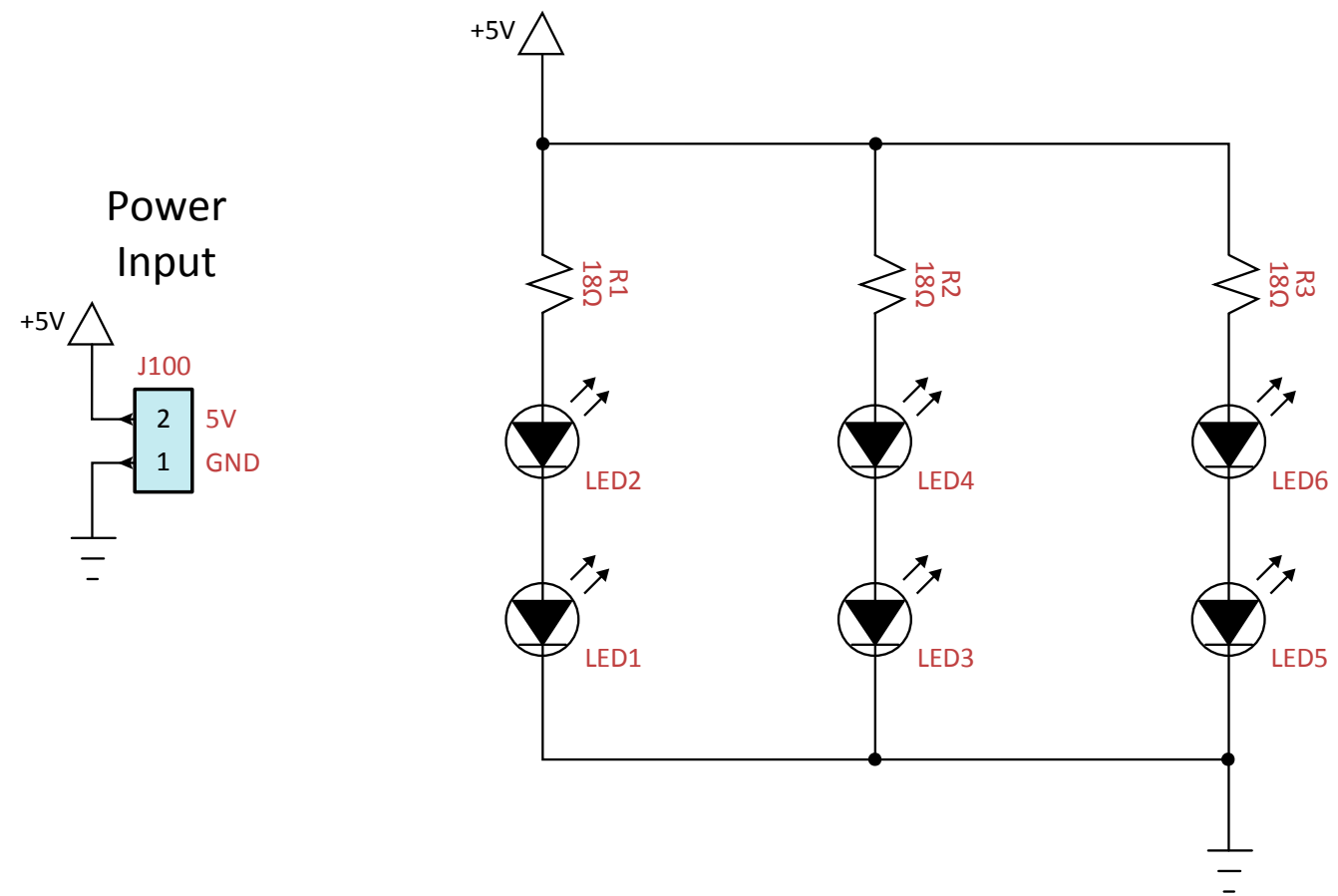
J100-1	RED	+5VDC from Primary ATX Pwr Supply
J100-2	BLK	Ground from Primary ATX Pwr Supply

5-Ball Trough Opto Transmitter Board  
15-000004-01

Component(s)	Part Number	Description
LED1-LED6	24-0002-0T	LED, IR Emitting, QED123, 880nm, 5mm
R1-R3	123-0018-1H4	Resistor, 2512 SMT, 18Ω, 1W, 5%
J100	31-2500-02	Header, Male, 2-pin, Rt Angle, 3.96mm



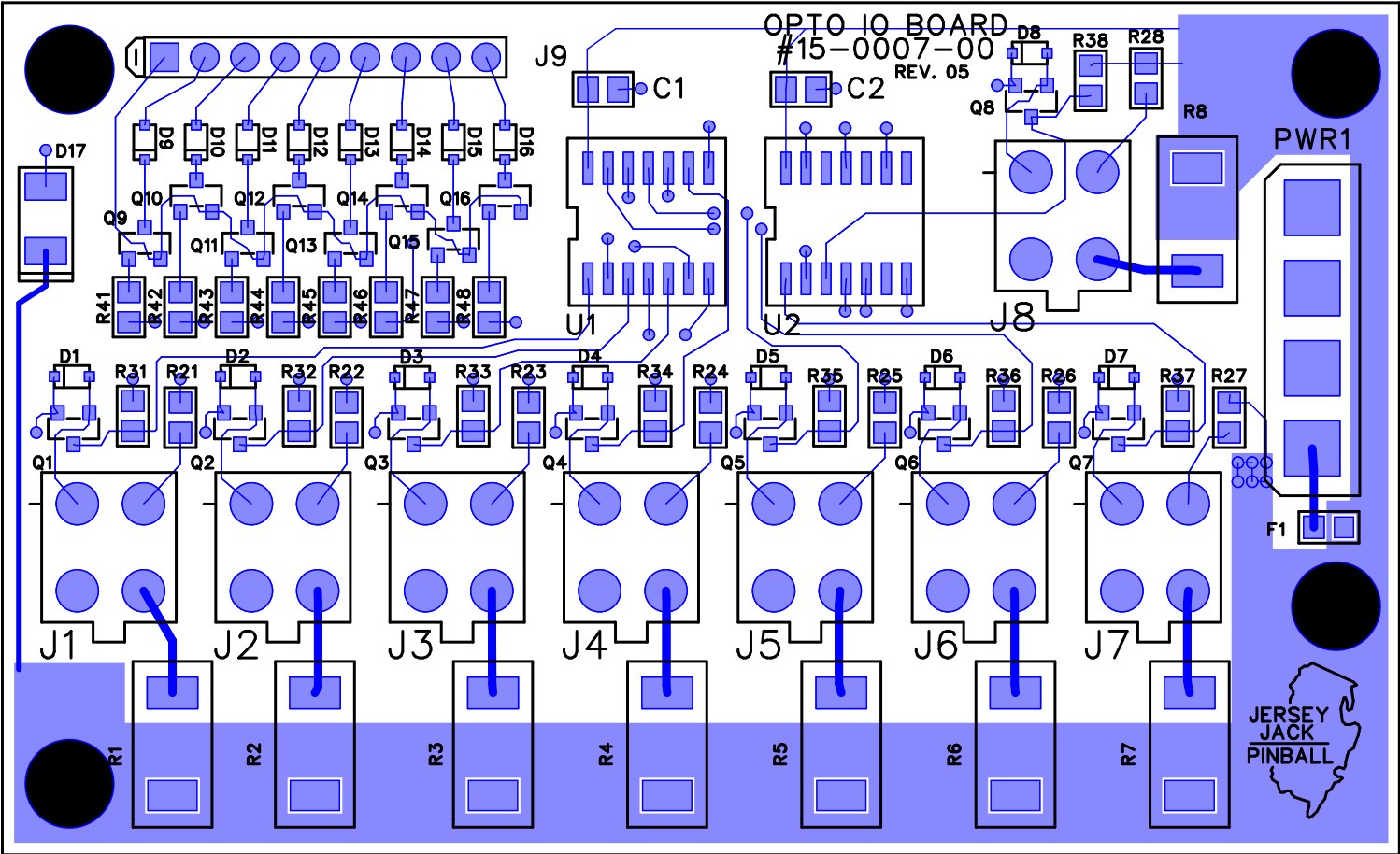
5-Ball Trough  
Opto Transmitter Board  
15-000004-01



5-Ball Trough Opto Transmitter Board  
15-000004-01  
Connector Pin-outs

J100 Power Input		
J100-1	RED	+5VDC from Primary ATX Pwr Supply
J100-2	BLK	Ground from Primary ATX Pwr Supply

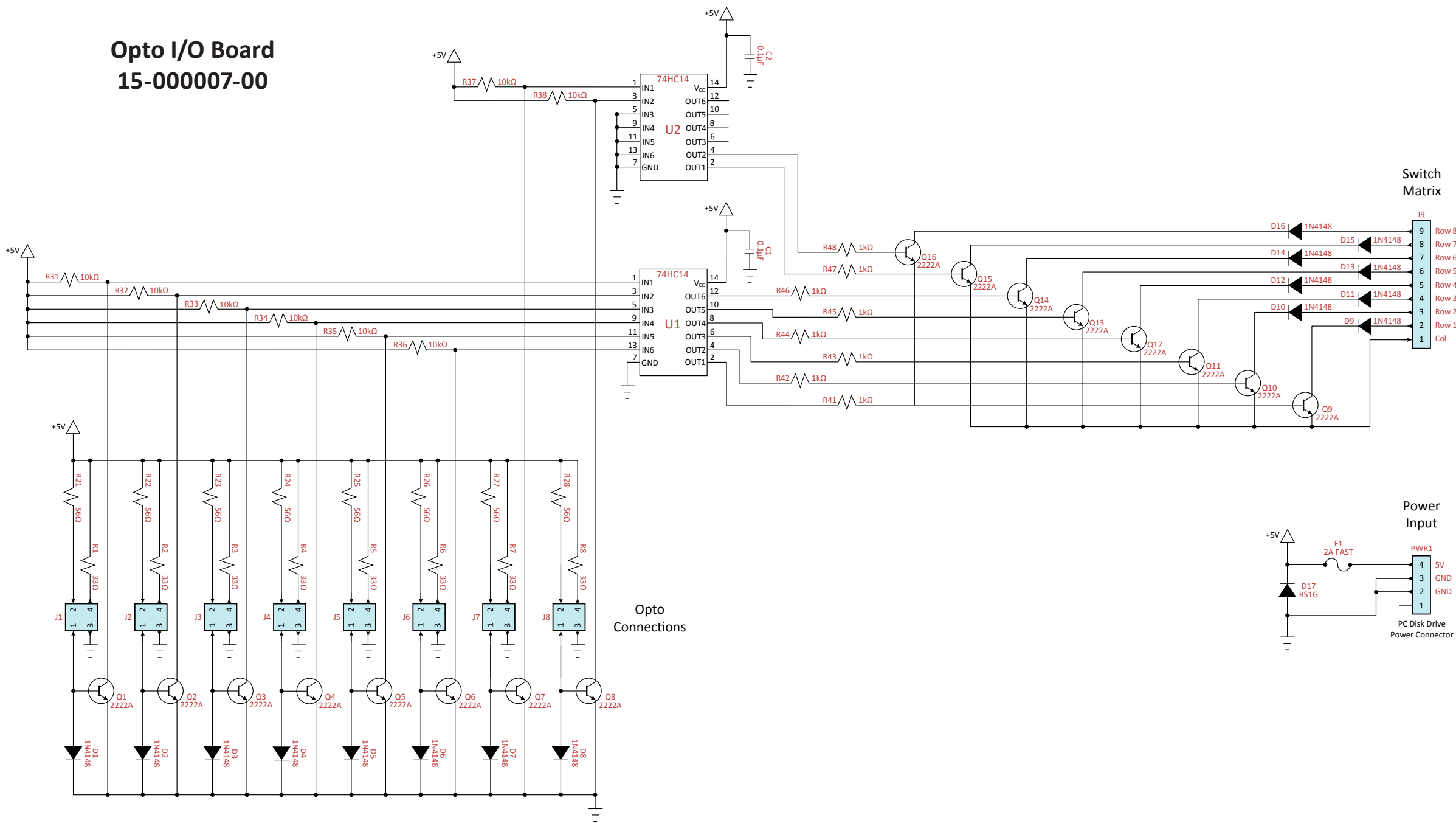


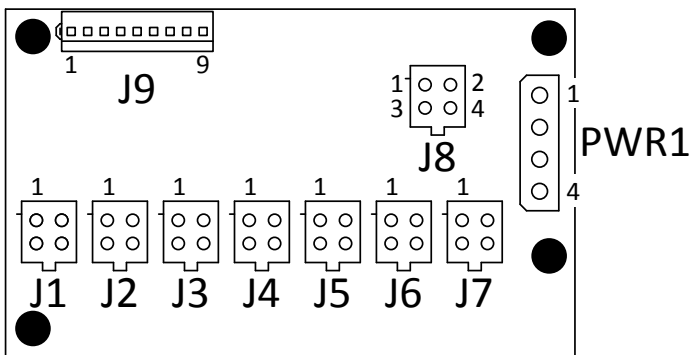


Opto I/O Board  
15-00007-00

Component(s)	Part Number	Description
C1, C2	100-104K-050	Capacitor, MLCC, 0805 SMT, 0.1μF, 50V, 10%
D1-D16	110-1000-0S	Diode, 1N4148, SMT, 75V, 300mA
D17	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F1	170-3202-FS	Fuse, Fast, 0805 SMT, 2A, 32V
Q1-Q16	131-0000-0S	Transistor, 2222A, SOT-23 SMT, NPN
R1-R8	123-0033-2HX	Resistor, 2512 SMT, 33Ω, 2W, 5%
R21-R28	120-0056-254	Resistor, 0805 SMT, 56Ω, 0.25W, 5%
R31-R38	120-10K0-334	Resistor, 0805 SMT, 10kΩ, 0.33W, 5%
R41-R48	120-1K00-334	Resistor, 0805 SMT, 1kΩ, 0.33W, 5%
U1, U2	141-0000-0S	Hex Inverters, Schmitt Trigger, 74HC14, SOT-108 SMT
PWR1	31-2502-04	Connector Header, Male, 4-pin, Power
J1-J8	31-2503-04	Connector Header, Male, 4-pin, 2 Rows, 4.2mm
J9	31-2504-09	Header, Male, 9-pin, 2.54mm





Opto I/O Board  
15-000007-00









**Left Opto I/O Board, 15-000007-00**  
**Connector Pin-outs**





**J1 Matrixed Sw 17 [Moving Target Home (left) U-shaped Opto]**

J1-1		GRN	RX of Moving Target Home U-shaped opto
J1-2		WHT	RX of Moving Target Home U-shaped opto
J1-3		BLK	TX of Moving Target Home U-shaped opto
J1-4		RED	TX of Moving Target Home U-shaped opto





**J2 Matrixed Sw 18 [Left Orbit Enter Opto Pair]**

J2-1		GRN	RX of Left Orbit Enter opto pair ("E" lead)
J2-2		WHT	RX of Left Orbit Enter opto pair ("C" lead)
J2-3		BLK	TX of Left Orbit Enter opto pair ("K" lead)
J2-4		RED	TX of Left Orbit Enter opto pair ("A" lead)





**J3 Matrixed Sw 19 [SIM Card Scoop Enter Opto Pair]**

J3-1		GRN	RX of SIM Card Scoop Enter opto pair ("E" lead)
J3-2		WHT	RX of SIM Card Scoop Enter opto pair ("C" lead)
J3-3		BLK	TX of SIM Card Scoop Enter opto pair ("K" lead)
J3-4		RED	TX of SIM Card Scoop Enter opto pair ("A" lead)





**J4 Matrixed Sw 20 [Bob Trap Door Enter Opto Pair]**

J4-1		GRN	RX of Bob Trap Door Enter opto pair ("E" lead)
J4-2		WHT	RX of Bob Trap Door Enter opto pair ("C" lead)
J4-3		BLK	TX of Bob Trap Door Enter opto pair ("K" lead)
J4-4		RED	TX of Bob Trap Door Enter opto pair ("A" lead)





**J5 Matrixed Sw 21 [STATION 3 Lock #1 (front) Opto Pair]**

J5-1		GRN	RX of STATION 3 Lock #1 opto pair ("E" lead)
J5-2		WHT	RX of STATION 3 Lock #1 opto pair ("C" lead)
J5-3		BLK	TX of STATION 3 Lock #1 opto pair ("K" lead)
J5-4		RED	TX of STATION 3 Lock #1 opto pair ("A" lead)





**J6 Matrixed Sw 22 [STATION 3 Lock #2 Opto Pair]**

J6-1		GRN	RX of STATION 3 Lock #2 opto pair ("E" lead)
J6-2		WHT	RX of STATION 3 Lock #2 opto pair ("C" lead)
J6-3		BLK	TX of STATION 3 Lock #2 opto pair ("K" lead)
J6-4		RED	TX of STATION 3 Lock #2 opto pair ("A" lead)

**J7 Matrixed Sw 23 [STATION 3 Lock #3 Opto Pair]**

J7-1		GRN	RX of STATION 3 Lock #3 opto pair ("E" lead)
J7-2		WHT	RX of STATION 3 Lock #3 opto pair ("C" lead)
J7-3		BLK	TX of STATION 3 Lock #3 opto pair ("K" lead)
J7-4		RED	TX of STATION 3 Lock #3 opto pair ("A" lead)

**J8 Matrixed Sw 24 [STATION 3 Lock #4 (back) Opto Pair]**

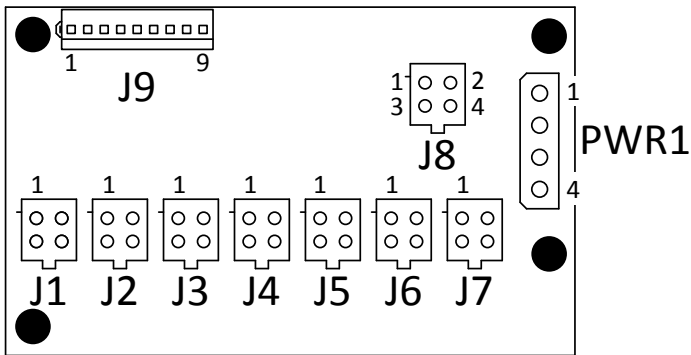
J8-1		GRN	RX of STATION 3 Lock #4 opto pair ("E" lead)
J8-2		WHT	RX of STATION 3 Lock #4 opto pair ("C" lead)
J8-3		BLK	TX of STATION 3 Lock #4 opto pair ("K" lead)
J8-4		RED	TX of STATION 3 Lock #4 opto pair ("A" lead)

**J9 Matrixed Switches**

J9-1	GRN-RED	Matrixed switches, Column 3 from I/O Board, J201-3
J9-2	WHT-BLK	Matrixed switches, Row 1 from I/O Board, J200-1
J9-3	WHT-BRN	Matrixed switches, Row 2 from I/O Board, J200-2
J9-4	WHT-RED	Matrixed switches, Row 3 from I/O Board, J200-3
J9-5	WHT-ORN	Matrixed switches, Row 4 from I/O Board, J200-4
J9-6	WHT-YEL	Matrixed switches, Row 5 from I/O Board, J200-5
J9-7	WHT-GRN	Matrixed switches, Row 6 from I/O Board, J200-6
J9-8	WHT-BLU	Matrixed switches, Row 7 from I/O Board, J200-7
J9-9	WHT-VIO	Matrixed switches, Row 8 from I/O Board, J200-8





**PWR1 Power Input**

PWR1-1	RED	+5VDC from Primary ATX Pwr Supply
PWR1-2	BLK	Ground from Primary ATX Pwr Supply
PWR1-3	Not Used	
PWR1-4	Not Used	



Right Opto I/O Board, 15-000007-00  
Connector Pin-outs





**J1 Matrixed Sw 9 [Moving Target Away (right) U-shaped Opto]**

J1-1		GRN	RX of Moving Target Away U-shaped opto
J1-2		WHT	RX of Moving Target Away U-shaped opto
J1-3		BLK	TX of Moving Target Away U-shaped opto
J1-4		RED	TX of Moving Target Away U-shaped opto





**J2 Opto #2 Connections**

J2-1	Not Used
J2-2	Not Used
J2-3	Not Used
J2-4	Not Used





**J3 Matrixed Sw 11 [Left Orbit Made Opto Pair]**

J3-1		GRN	RX of Left Orbit Made opto pair (“E” lead)
J3-2		WHT	RX of Left Orbit Made opto pair (“C” lead)
J3-3		BLK	TX of Left Orbit Made opto pair (“K” lead)
J3-4		RED	TX of Left Orbit Made opto pair (“A” lead)

**J4 Matrixed Sw 12 [Phone Scoop Enter Opto Pair]**

J4-1		GRN	RX of Phone Scoop Enter opto pair (“E” lead)
J4-2		WHT	RX of Phone Scoop Enter opto pair (“C” lead)
J4-3		BLK	TX of Phone Scoop Enter opto pair (“K” lead)
J4-4		RED	TX of Phone Scoop Enter opto pair (“A” lead)

**J5 Matrixed Sw 13 [Theater Enter Opto Pair]**

J5-1		GRN	RX of Theater Enter opto pair (“E” lead)
J5-2		WHT	RX of Theater Enter opto pair (“C” lead)
J5-3		BLK	TX of Theater Enter opto pair (“K” lead)
J5-4		RED	TX of Theater Enter opto pair (“A” lead)

**J6 Opto #6 Connections**

J6-1	Not Used
J6-2	Not Used
J6-3	Not Used
J6-4	Not Used

**J7 Opto #7 Connections**

J7-1	Not Used
J7-2	Not Used
J7-3	Not Used
J7-4	Not Used

**J8 Opto #8 Connections**

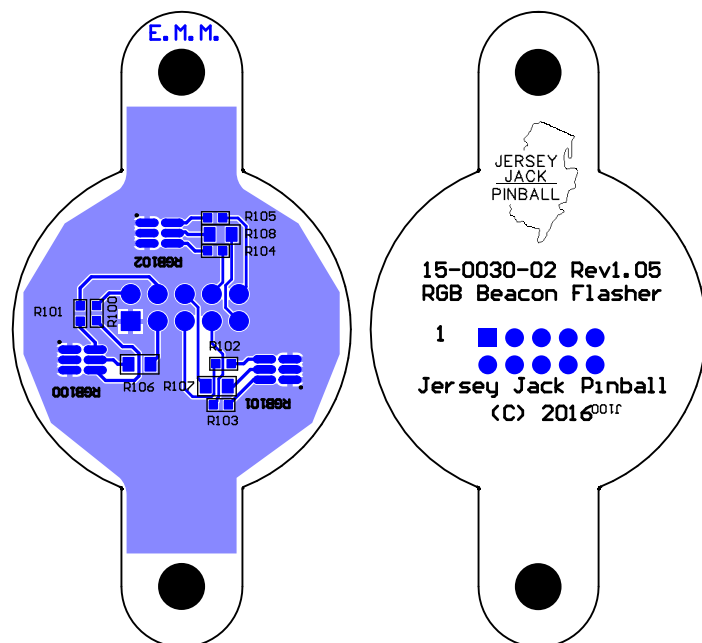
J8-1	Not Used
J8-2	Not Used
J8-3	Not Used
J8-4	Not Used

**J9 Matrixed Switches**

J9-1	GRN-BRN	Matrixed switches, Column 2 from I/O Board, J201-2
J9-2	WHT-BLK	Matrixed switches, Row 1 from I/O Board, J200-1
J9-3	WHT-BRN	Matrixed switches, Row 2 from I/O Board, J200-2
J9-4	WHT-RED	Matrixed switches, Row 3 from I/O Board, J200-3
J9-5	WHT-ORN	Matrixed switches, Row 4 from I/O Board, J200-4
J9-6	WHT-YEL	Matrixed switches, Row 5 from I/O Board, J200-5
J9-7	WHT-GRN	Matrixed switches, Row 6 from I/O Board, J200-6
J9-8	WHT-BLU	Matrixed switches, Row 7 from I/O Board, J200-7
J9-9	WHT-VIO	Matrixed switches, Row 8 from I/O Board, J200-8

**PWR1 Power Input**

PWR1-1	RED	+5VDC from Primary ATX Pwr Supply
PWR1-2	BLK	Ground from Primary ATX Pwr Supply
PWR1-3	Not Used	
PWR1-4	Not Used	



## RGB Beacon Flasher Board

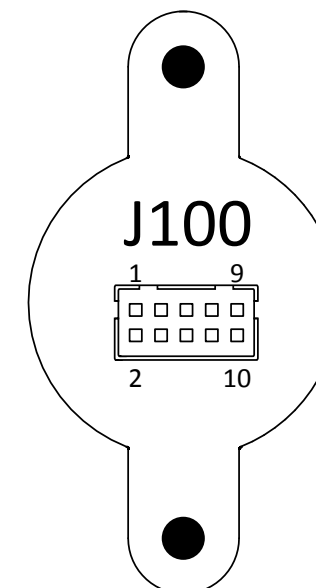
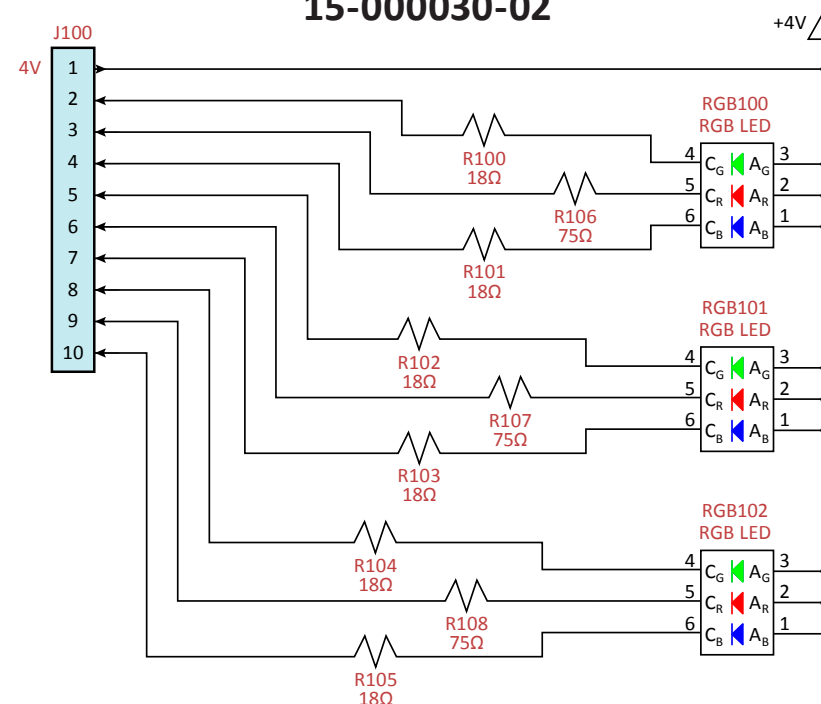
15-000030-02

(games manufactured before Nov 1, 2017)

Component(s)	Part Number	Description
R100-R105	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R106-R108	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB100-RGB102	24-0016-05	LED, SMT, High-Power RGB, 624/527/470nm
J100	30-2203-10	Header, Male, 10-Pin, 2 Rows, 2.5mm

## RGB Beacon Flasher Board

15-000030-02



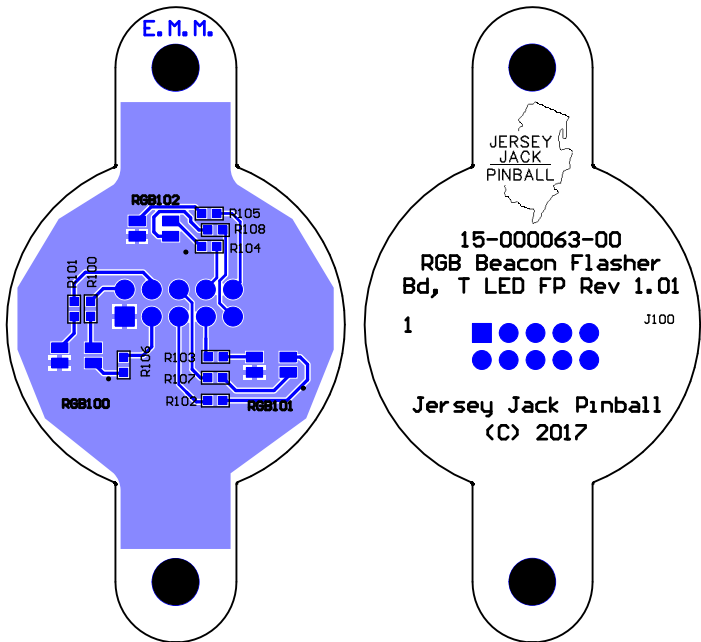
## RGB Beacon Flasher Board, 15-000030-02

### Connector Pin-outs

#### J100 RGB LED Control/Power Input (RGB Cable 19-009030-02)

J100-1	BLK	+4VDC from DI DIALED IN/Left RGB LED Bd, J202-1
J100-2	BLK-GRN	RGB100 GRN return to DI DIALED IN/Left RGB LED Bd, J202-4
J100-3	BLK-RED	RGB100 RED return to DI DIALED IN/Left RGB LED Bd, J202-3
J100-4	BLK-BLU	RGB100 BLU return to DI DIALED IN/Left RGB LED Bd, J202-2
J100-5	BRN-GRN	RGB100 GRN return to DI DIALED IN/Left RGB LED Bd, J202-8
J100-6	BRN-RED	RGB100 RED return to DI DIALED IN/Left RGB LED Bd, J202-7
J100-7	BRN-BLU	RGB100 BLU return to DI DIALED IN/Left RGB LED Bd, J202-6
J100-8	RED-GRN	RGB100 GRN return to DI DIALED IN/Left RGB LED Bd, J202-12
J100-9	RED-GRY	RGB100 RED return to DI DIALED IN/Left RGB LED Bd, J202-11
J100-10	RED-BLU	RGB100 BLU return to DI DIALED IN/Left RGB LED Bd, J202-10

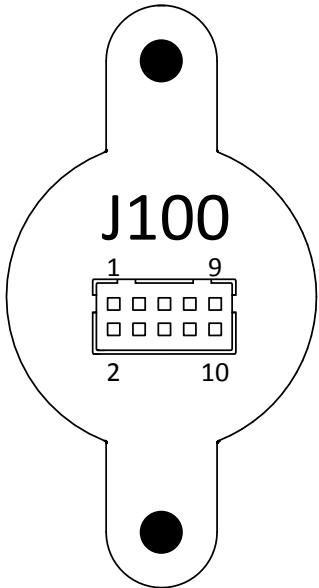
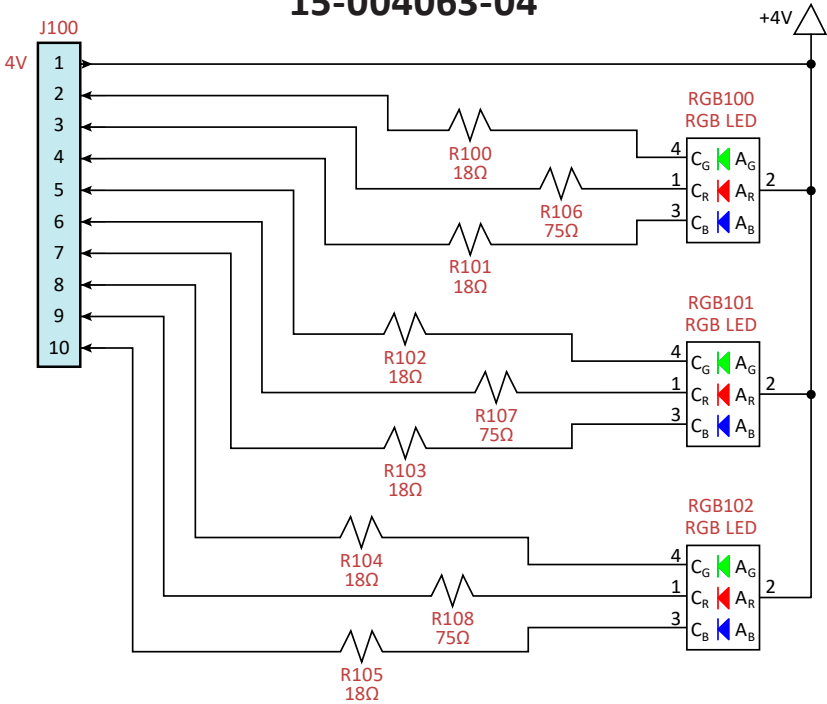




**RGB Beacon Flasher PCB Assy, T LED FP, 4V**  
**15-004063-04**  
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
BARE PCB	15-000063-00	RGB Beacon Flasher Board, T LED FP, 4V
R100-R105	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R106-R108	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB100-RGB102	24-0027-05	LED, SMT, RGB, 622/523/470nm
J100	30-2203-10	Header, Male, 10-Pin, 2 Rows, 2.5mm

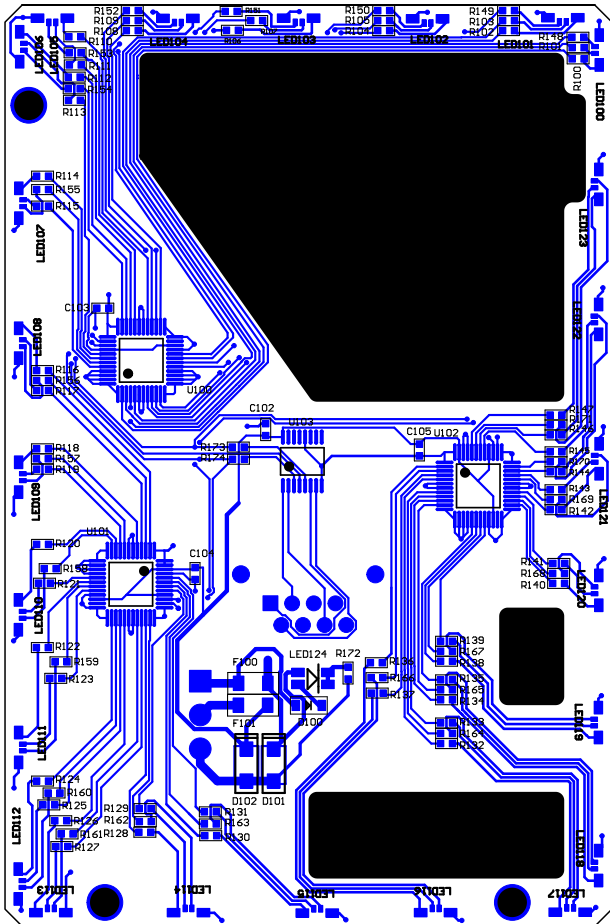
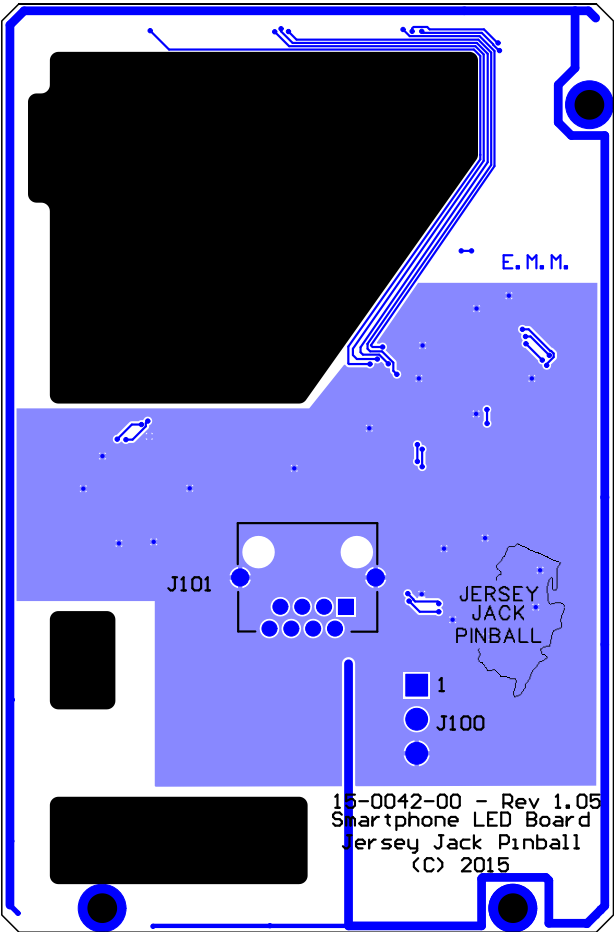
**RGB Beacon Flasher PCB Assy, T LED FP, 4V**  
**15-004063-04**



**RGB Beacon Flasher PCB Assy, T LED FP, 4V, 15-004063-04**  
**Connector Pin-outs**

**J100 RGB LED Control/Power Input (RGB Cable 19-009030-02)**

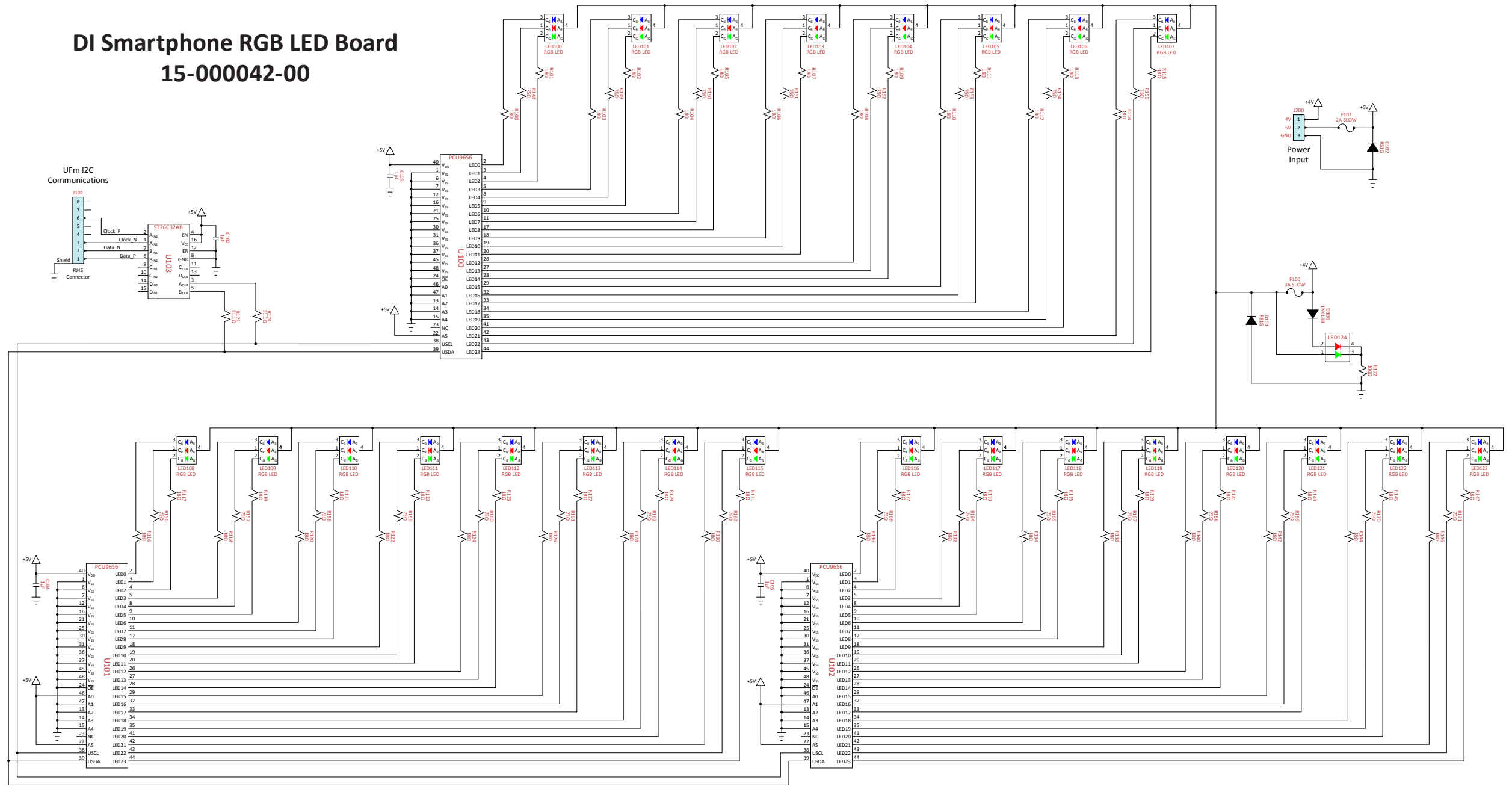
J100-1	BLK	+4VDC from DI DIALED IN/Left RGB LED Bd, J202-1
J100-2	BLK-GRN	RGB100 GRN return to DI DIALED IN/Left RGB LED Bd, J202-4
J100-3	BLK-RED	RGB100 RED return to DI DIALED IN/Left RGB LED Bd, J202-3
J100-4	BLK-BLU	RGB100 BLU return to DI DIALED IN/Left RGB LED Bd, J202-2
J100-5	BRN-GRN	RGB100 GRN return to DI DIALED IN/Left RGB LED Bd, J202-8
J100-6	BRN-RED	RGB100 RED return to DI DIALED IN/Left RGB LED Bd, J202-7
J100-7	BRN-BLU	RGB100 BLU return to DI DIALED IN/Left RGB LED Bd, J202-6
J100-8	RED-GRN	RGB100 GRN return to DI DIALED IN/Left RGB LED Bd, J202-12
J100-9	RED-GRY	RGB100 RED return to DI DIALED IN/Left RGB LED Bd, J202-11
J100-10	RED-BLU	RGB100 BLU return to DI DIALED IN/Left RGB LED Bd, J202-10

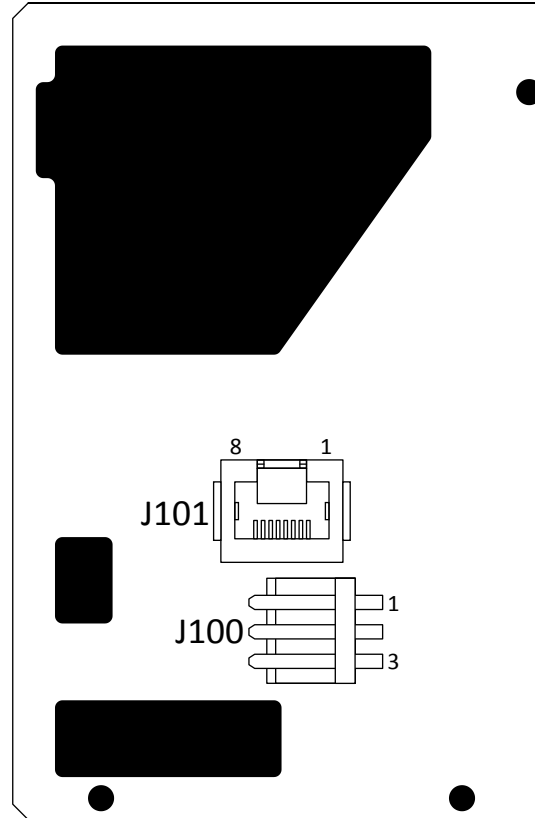


### DI Smartphone RGB LED Board 15-00042-00

Component(s)	Part Number	Description
C102-C105	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1µF, 16V, +80%, -20%
D100	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D101, D102	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F100	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F101	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED100-LED123	24-0025-0S	LED, SMD, Side View, RGB, 624/525/470nm
LED124	24-0020-0S	LED, 1210 SMD, RED/GRN, 621/569nm
R100-R147	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R148-R171	122-0075-252	Resistor, 0603 SMT, 75Ω, 0.25W, 1%
R172	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R173, R174	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
U100-U102	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
U103	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
J100	30-2004-03R	Header, Male, 3-pin, Rt Angle, 3.96mm
J101	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)

**DI Smartphone RGB LED Board**  
**15-000042-00**





## DI Smartphone RGB LED Board, 15-000042-00

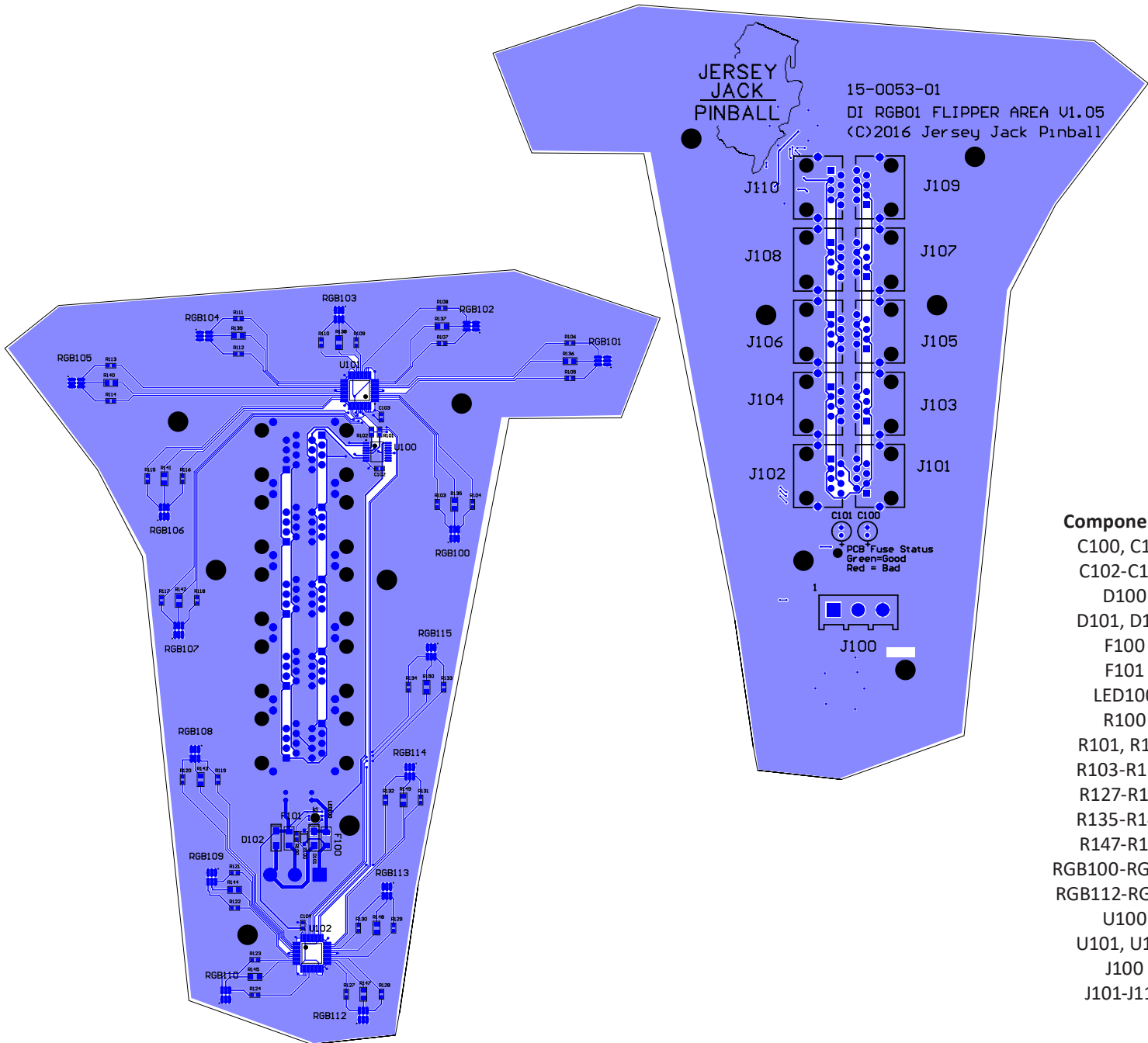
### Connector Pin-outs

#### ***J100 Power Input***

J100-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J100-2	RED	+5VDC from Primary ATX Pwr Supply
J100-3	BLK	Ground from 7.5/4VDC Pwr Supply

#### ***J101 UFM I2C Communications***

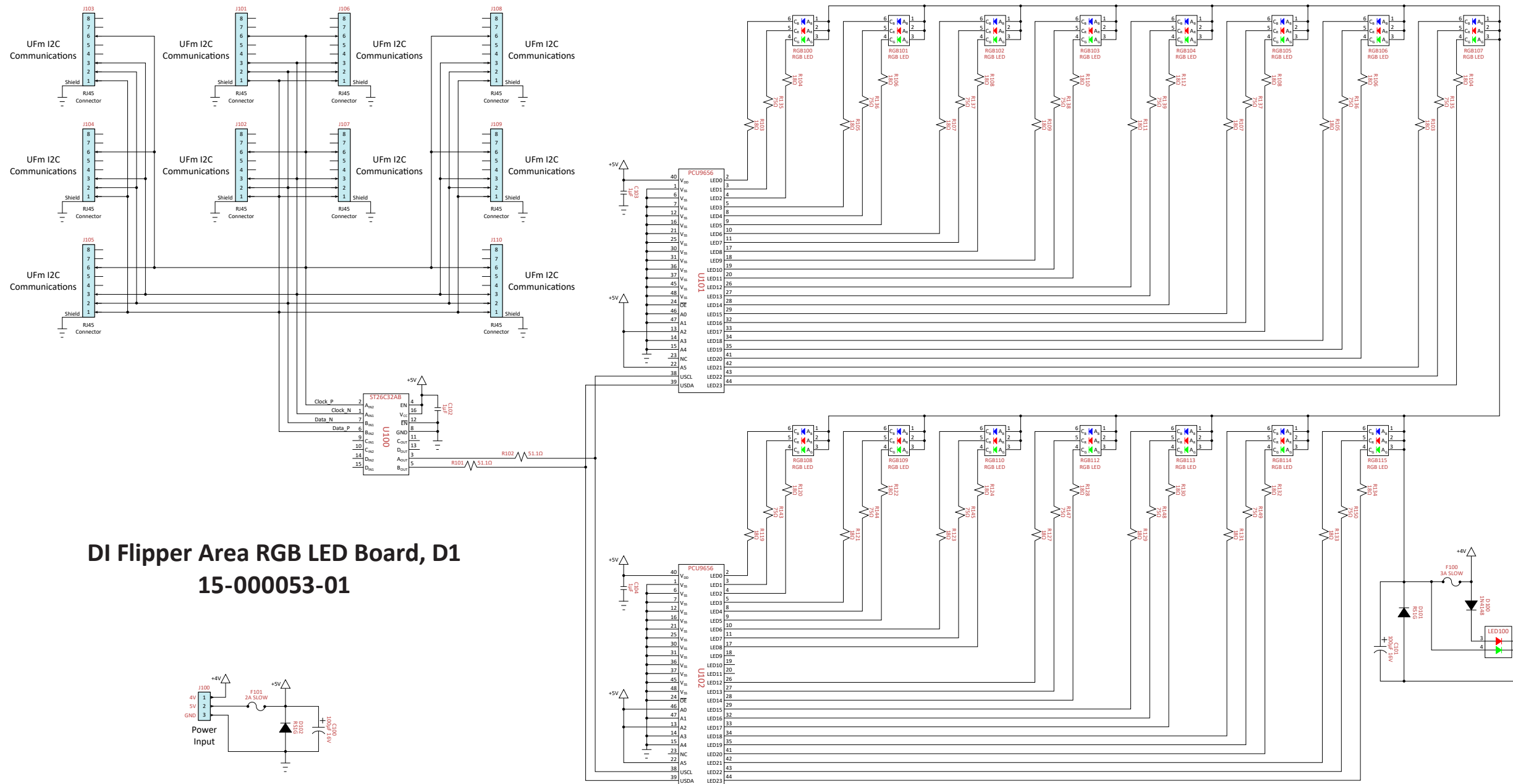
CAT5 or higher Ethernet cable to DI Flipper Area RGB LED Bd, J109



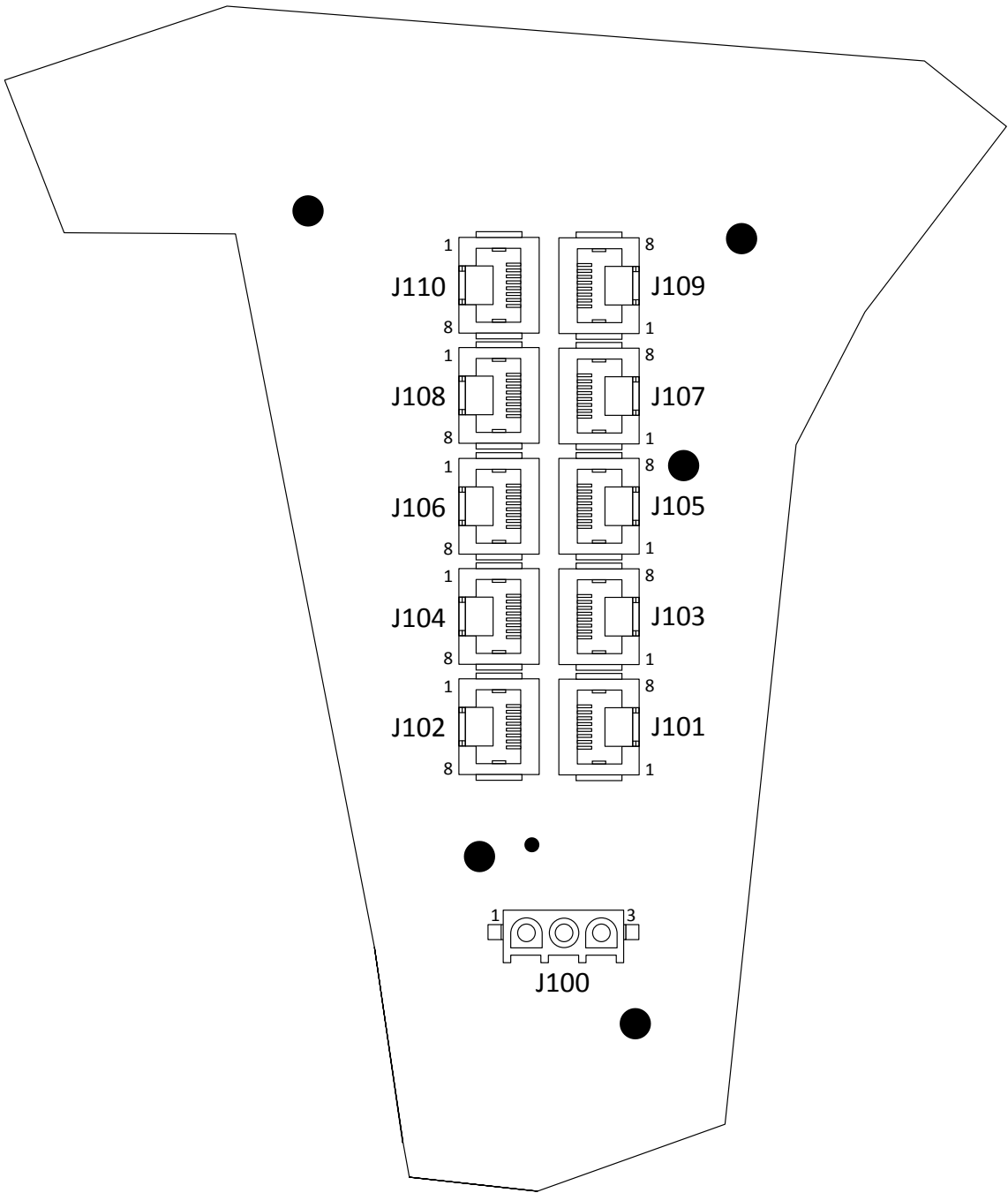
DI Flipper Area RGB LED Board, D1  
15-000053-01  
(games manufactured before Nov 1, 2017)

Component(s)	Part Number	Description
C100, C101	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C102-C104	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D100	110-1001-05	Diode, 1N4148, SMT, 100V, 300mA
D101, D102	110-5001-05	Diode, RS1G, SMT, 400V, 1A, 150ns
F100	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F101	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED100	24-0024-05	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R100	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R101, R102	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R103-R124, R127-R134	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R135-R145, R147-R150	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB100-RGB110, RGB112-RGB115	24-0016-05	LED, SMT, High-Power RGB, 624/527/470nm
U100	141-0020-05	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U101, U102	140-0005-05	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J100	30-2005-03	Header, Male, 3-pin, 6.35mm
J101-J110	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)





DI Flipper Area RGB LED Board, D1  
15-000053-01  
Connector Pin-outs



**J100 Power Input**

J100-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J100-2	RED	+5VDC from Primary ATX Pwr Supply
J100-3	BLK	Ground from 7.5/4VDC Pwr Supply

**J101 UFM I2C Communications**

CAT5 or higher Ethernet cable from RGB LED Controller Bd, J105

**J102 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI DIALED IN/Left RGB LED Bd, J201

**J103 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Left Shots RGB LED Bd, J301

**J104 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Drone Magnet RGB LED Bd, J401

**J105 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Right Shots RGB LED Bd, J501

**J106 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Center Shots RGB LED Bd, J601

**J107 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Pop Bumper Area RGB LED Bd, J701

**J108 UFM I2C Communications**

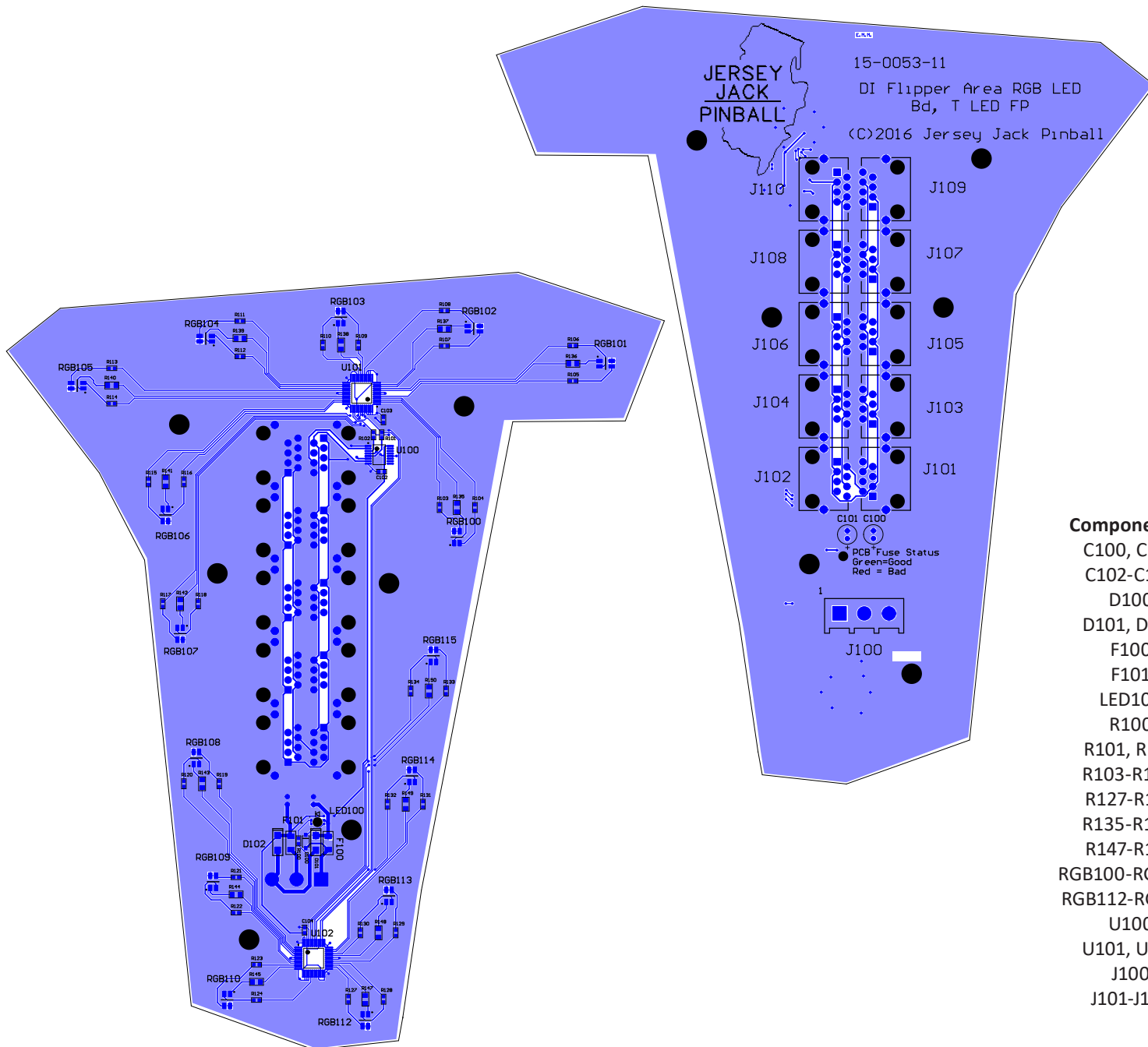
CAT5 or higher Ethernet cable to DI Shooter Lane RGB LED Bd, J801

**J109 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Smartphone RGB LED Bd, J101

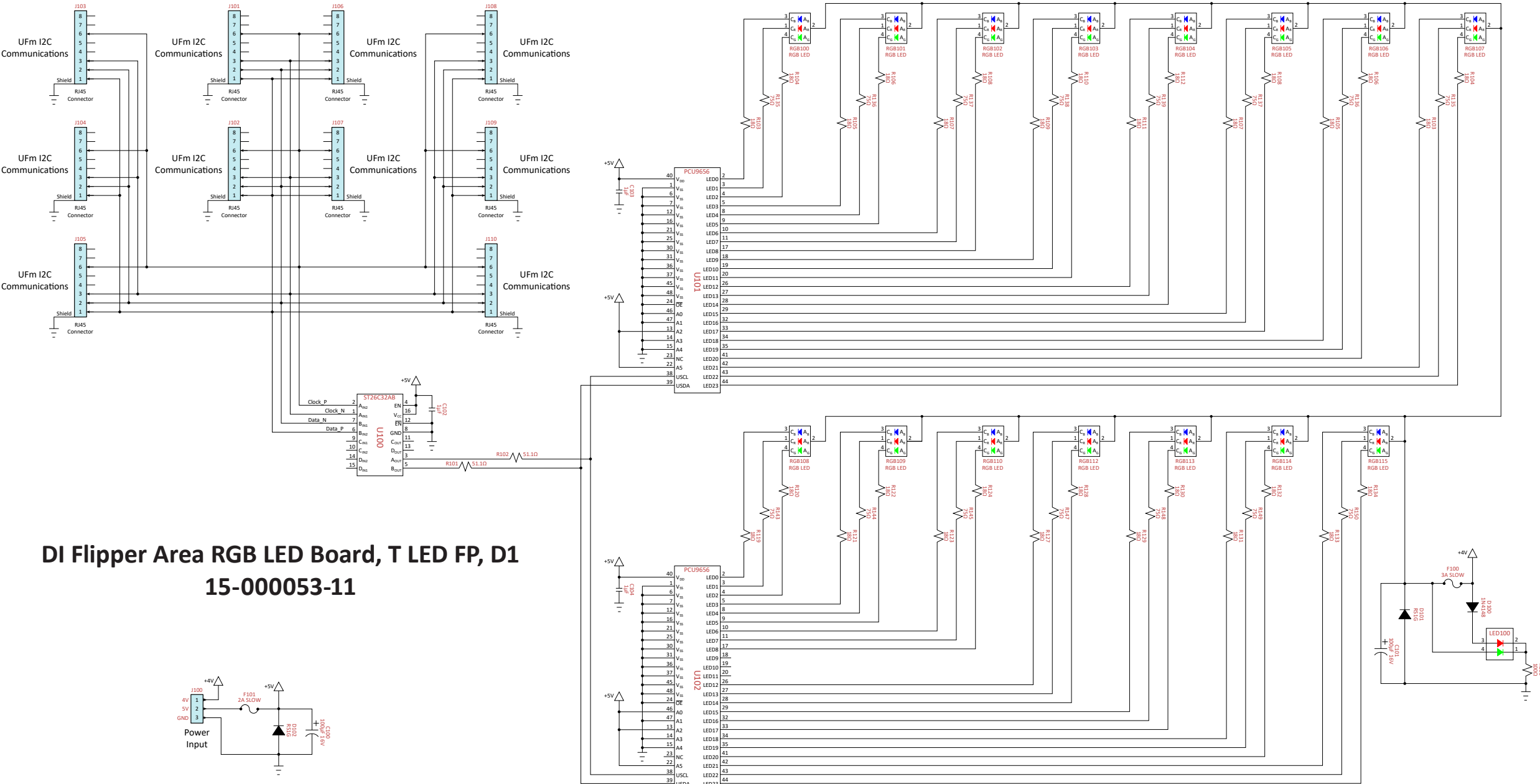
**J110 UFM I2C Communications**

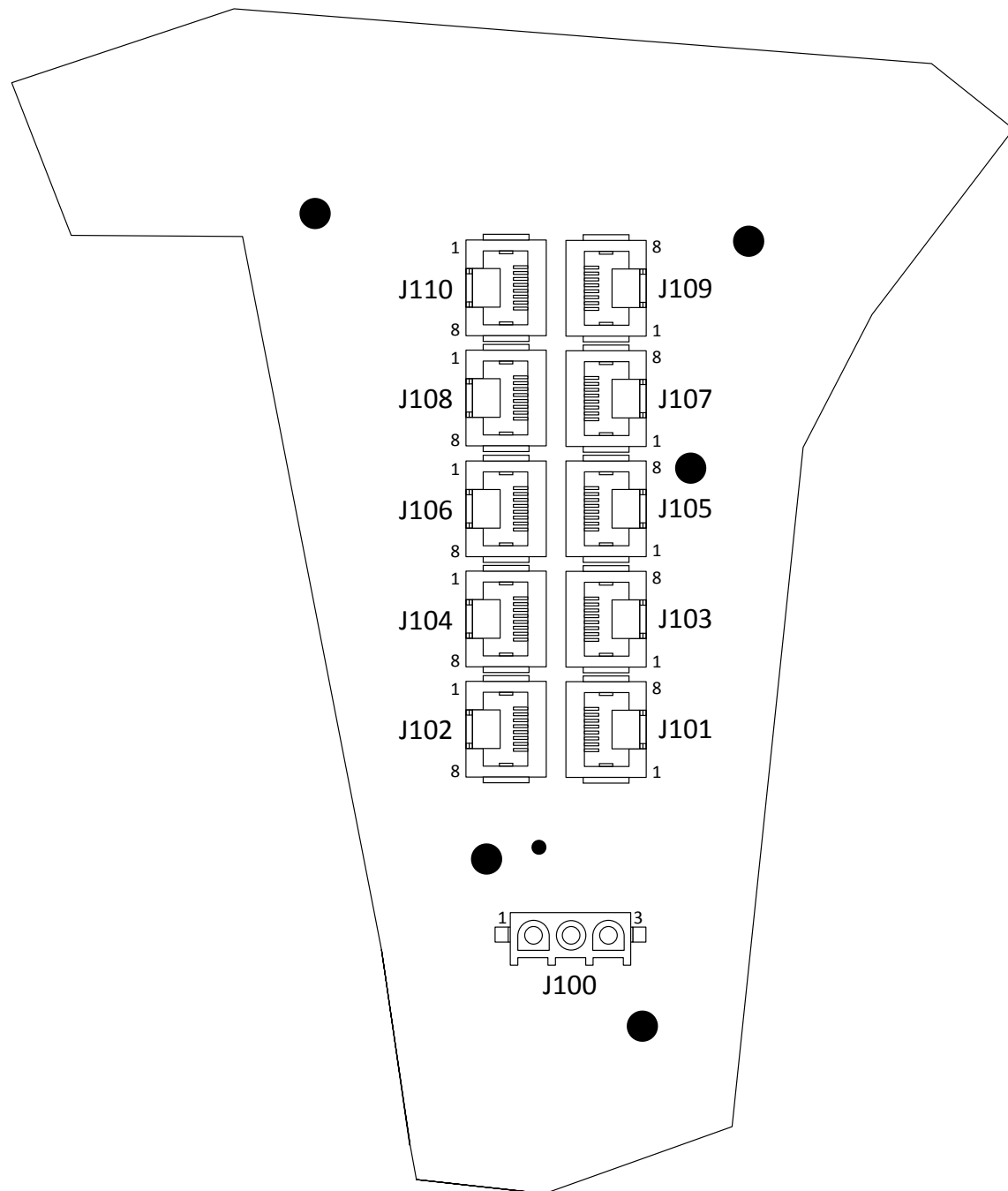
Not Used



**DI Flipper Area RGB LED Board, T LED FP, D1**  
**15-000053-11**  
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C100, C101	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C102-C104	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D100	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D101, D102	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F100	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F101	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED100	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R100	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R101, R102	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R103-R124, R127-R134, R135-R145, R147-R150	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
RGB100-RGB110, RGB112-RGB115	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
U100	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U101, U102	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
J100	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J101-J110	30-2005-03	Header, Male, 3-pin, 6.35mm
	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)





## DI Flipper Area RGB LED Board, T LED FP, D1 15-000053-11 Connector Pin-outs

### **J100 Power Input**

J100-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J100-2	RED	+5VDC from Primary ATX Pwr Supply
J100-3	BLK	Ground from 7.5/4VDC Pwr Supply

### **J101 UFM I2C Communications**

CAT5 or higher Ethernet cable from RGB LED Controller Bd, J105

### **J102 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI DIALED IN/Left RGB LED Bd, J201

### **J103 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Left Shots RGB LED Bd, J301

### **J104 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Drone Magnet RGB LED Bd, J401

### **J105 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Right Shots RGB LED Bd, J501

### **J106 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Center Shots RGB LED Bd, J601

### **J107 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Pop Bumper Area RGB LED Bd, J701

### **J108 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Shooter Lane RGB LED Bd, J801

### **J109 UFM I2C Communications**

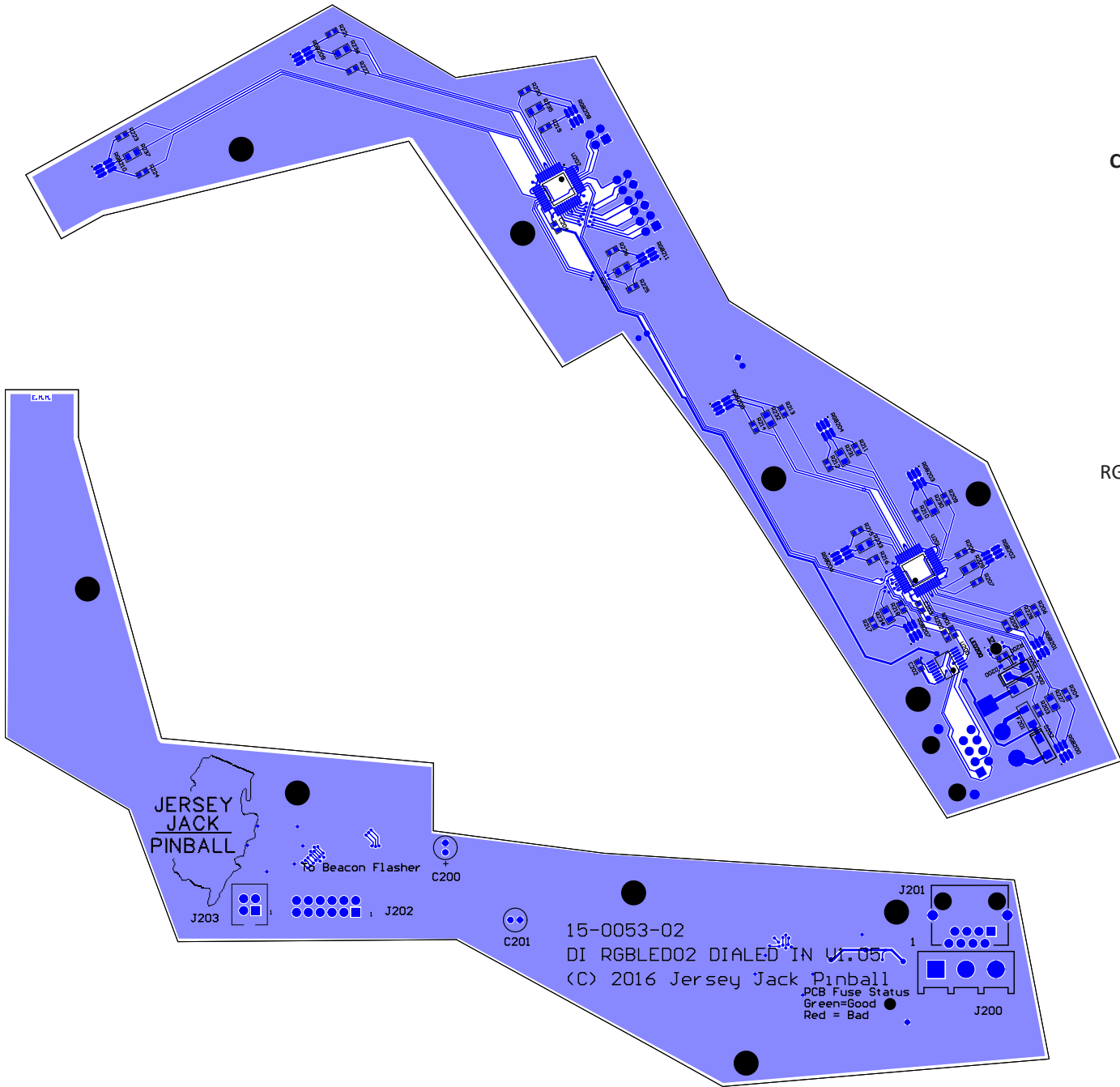
CAT5 or higher Ethernet cable to DI Smartphone RGB LED Bd, J101

### **J110 UFM I2C Communications**

Not Used

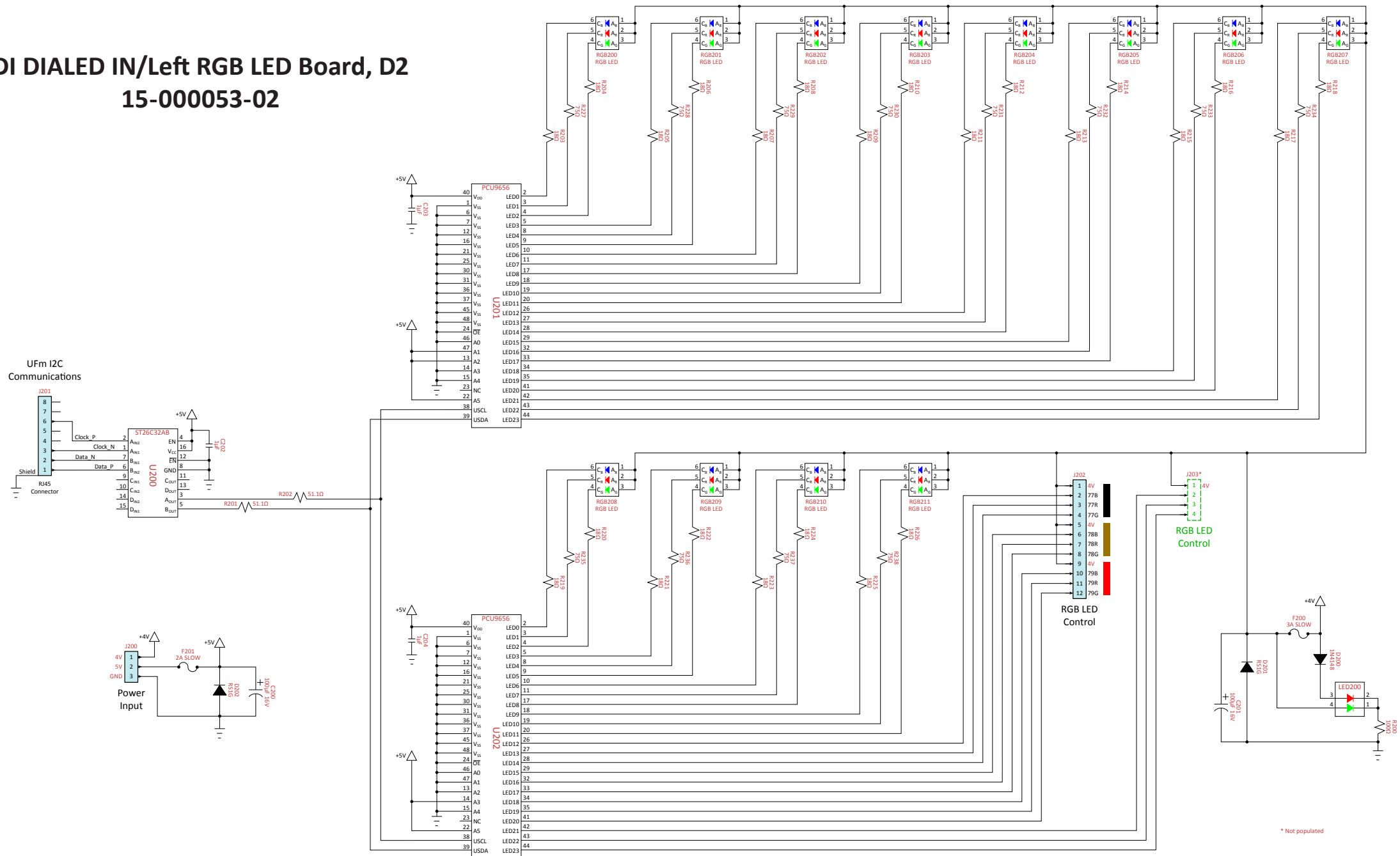


DI DIALED IN/Left RGB LED Board, D2  
15-000053-02  
(games manufactured before Nov 1, 2017)

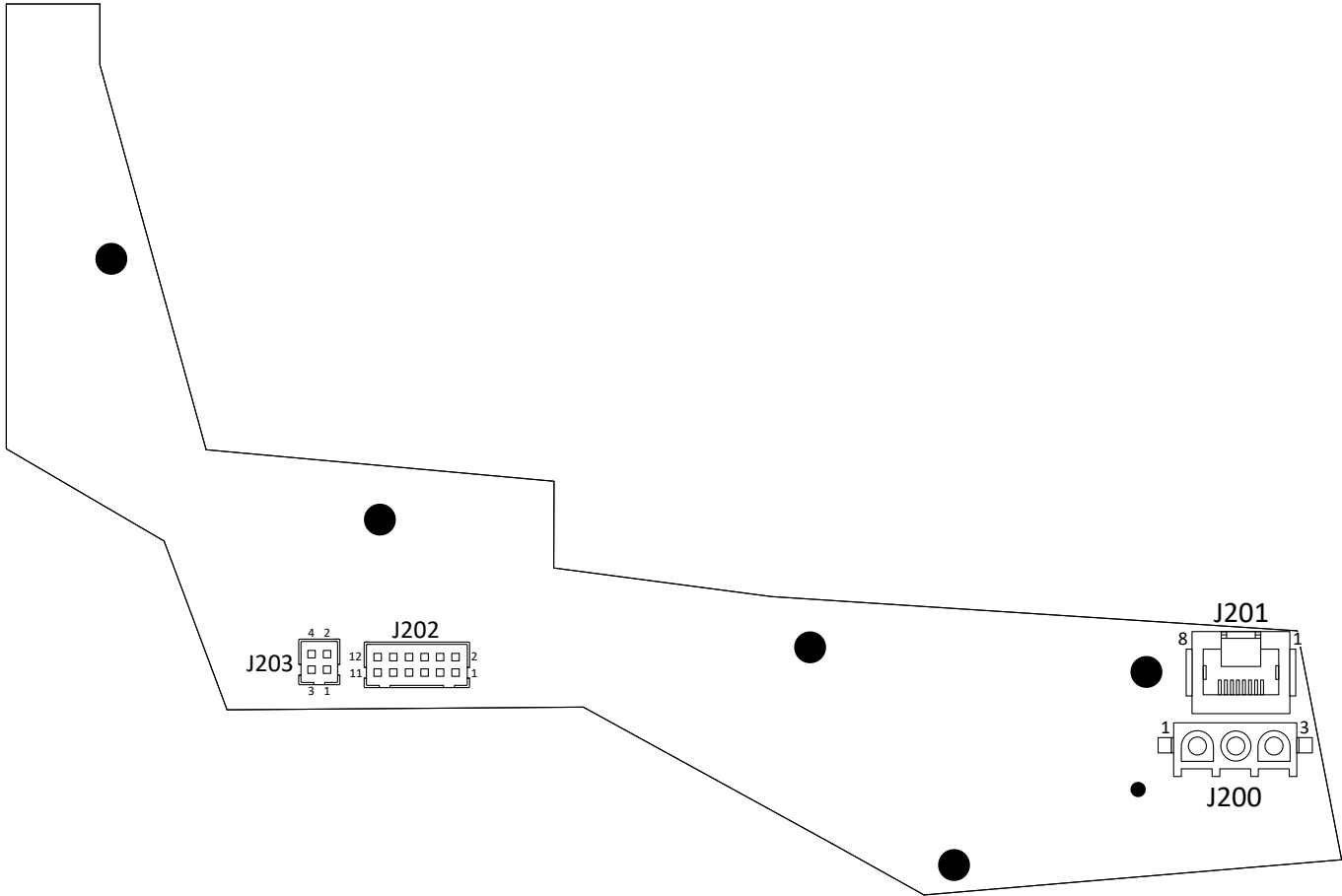


Component(s)	Part Number	Description
C200, C201	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C202-C204	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D200	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D201, D202	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F200	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F201	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED200	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R200	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R201, R202	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R203-R226	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R227-R238	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB200-RGB211	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U200	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U201, U202	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J200	30-2005-03	Header, Male, 3-pin, 6.35mm
J201	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J202	30-2203-12	Header, Male, 12-Pin, 2 Rows, 2.5mm
J203		Not Populated

DI DIALED IN/Left RGB LED Board, D2  
15-000053-02



DI DIALED IN/Left RGB LED Board, D2  
15-000053-02  
Connector Pin-outs



J200 Power Input

J200-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J200-2	RED	+5VDC from Primary ATX Pwr Supply
J200-3	BLK	Ground from 7.5/4VDC Pwr Supply

J201 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J102

J202 RGB LED Control (RGB Cable 19-009030-02)

RGB LED 77 [Beacon Flasher #1]

J202-1	BLK	+4VDC to RGB Beacon Flasher Bd 77/78/79, J100-1
J202-2	BLK-BLU	RGB100 BLU return from RGB Beacon Flasher Bd 77/78/79, J100-4
J202-3	BLK-RED	RGB100 RED return from RGB Beacon Flasher Bd 77/78/79, J100-3
J202-4	BLK-GRN	RGB100 GRN return from RGB Beacon Flasher Bd 77/78/79, J100-2

RGB LED 78 [Beacon Flasher #2]

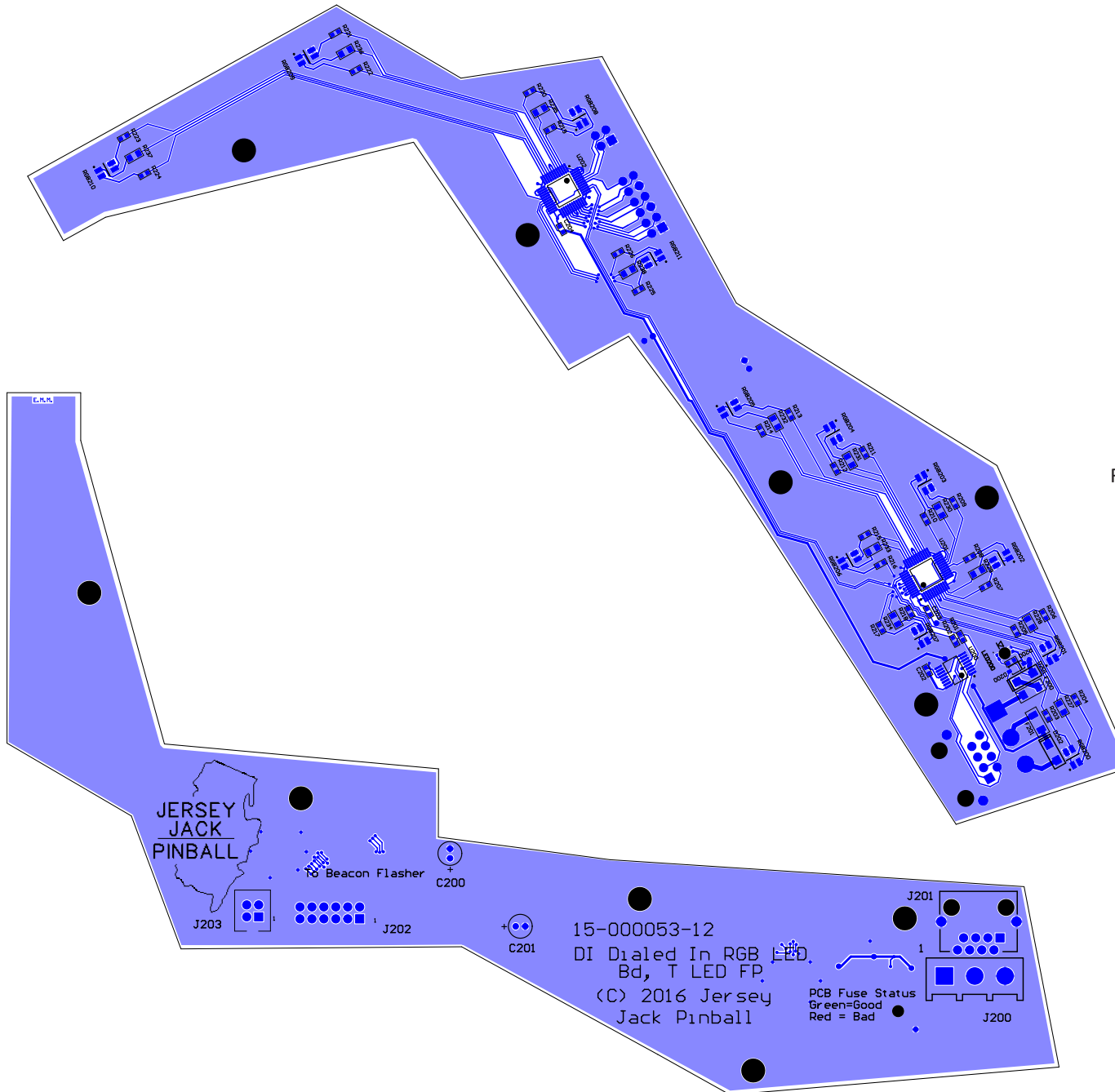
J202-5	Not Used	
J202-6	BRN-BLU	RGB101 BLU return from RGB Beacon Flasher Bd 77/78/79, J100-7
J202-7	BRN-RED	RGB101 RED return from RGB Beacon Flasher Bd 77/78/79, J100-6
J202-8	BRN-GRN	RGB101 GRN return from RGB Beacon Flasher Bd 77/78/79, J100-5

RGB LED 79 [Beacon Flasher #3]

J202-9	Not Used	
J202-10	RED-BLU	RGB102 BLU return from RGB Beacon Flasher Bd 77/78/79, J100-10
J202-11	RED-GRY	RGB102 RED return from RGB Beacon Flasher Bd 77/78/79, J100-9
J202-12	RED-GRN	RGB102 GRN return from RGB Beacon Flasher Bd 77/78/79, J100-8

J203 RGB LED Control

Not Used (Not Populated)



## DI DIALED IN/Left RGB LED Board, T LED FP, D2 15-000053-12

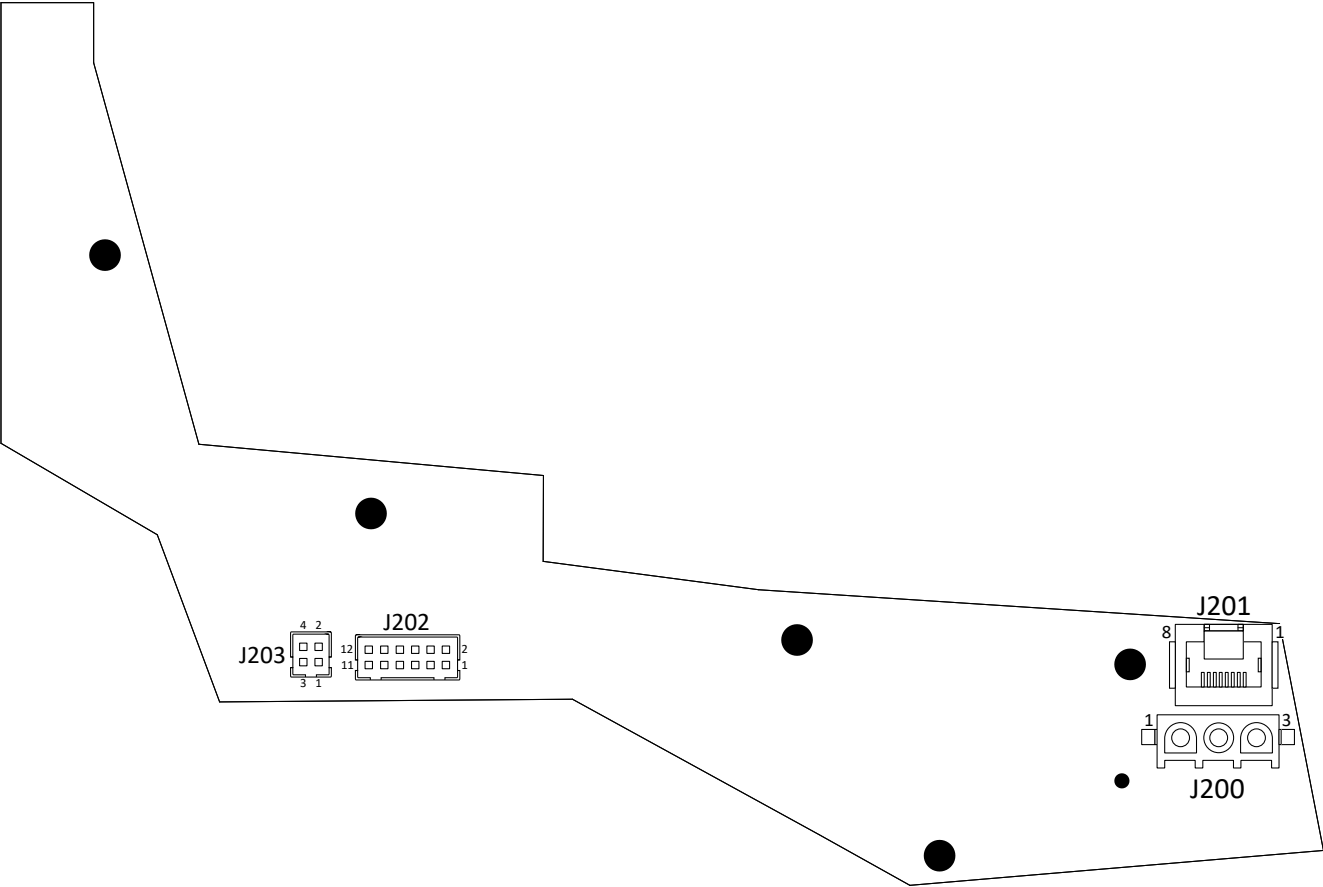
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C200, C201	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C202-C204	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D200	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D201, D202	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F200	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F201	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED200	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R200	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R201, R202	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R203-R226	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R227-R238	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB200-RGB211	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U200	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U201, U202	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J200	30-2005-03	Header, Male, 3-pin, 6.35mm
J201	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J202	30-2203-12	Header, Male, 12-Pin, 2 Rows, 2.5mm
J203		Not Populated

## D-26







DI DIALED IN/Left RGB LED Board, T LED, FP, D2  
15-000053-12  
Connector Pin-outs

J200 Power Input

J200-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J200-2	RED	+5VDC from Primary ATX Pwr Supply
J200-3	BLK	Ground from 7.5/4VDC Pwr Supply

J201 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J102

J202 RGB LED Control (RGB Cable 19-009030-02)

RGB LED 77 [Beacon Flasher #1]

J202-1	BLK	+4VDC to RGB Beacon Flasher Bd 77/78/79, J100-1
J202-2	BLK-BLU	RGB100 BLU return from RGB Beacon Flasher Bd 77/78/79, J100-4
J202-3	BLK-RED	RGB100 RED return from RGB Beacon Flasher Bd 77/78/79, J100-3
J202-4	BLK-GRN	RGB100 GRN return from RGB Beacon Flasher Bd 77/78/79, J100-2

RGB LED 78 [Beacon Flasher #2]

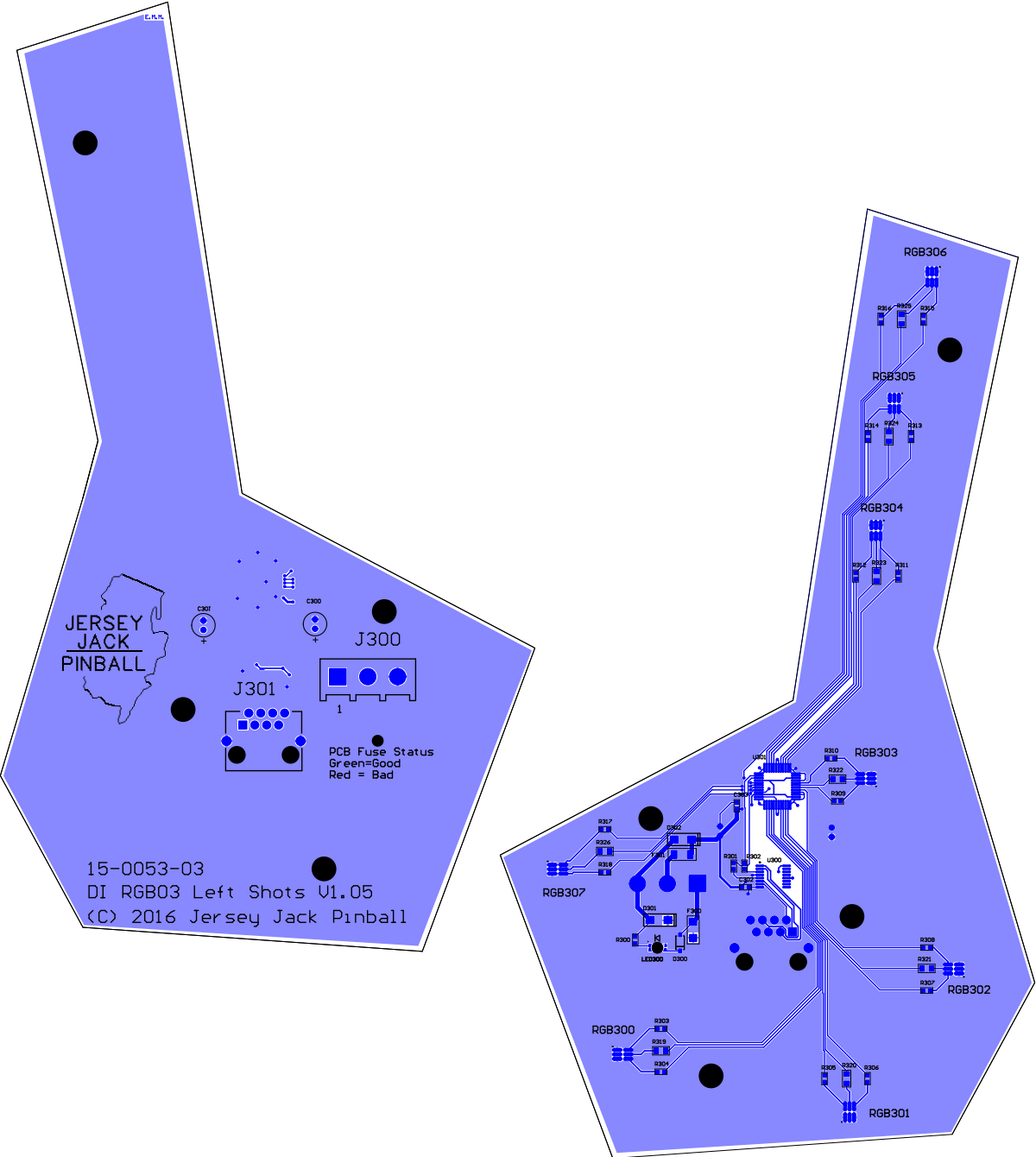
J202-5	Not Used	
J202-6	BRN-BLU	RGB101 BLU return from RGB Beacon Flasher Bd 77/78/79, J100-7
J202-7	BRN-RED	RGB101 RED return from RGB Beacon Flasher Bd 77/78/79, J100-6
J202-8	BRN-GRN	RGB101 GRN return from RGB Beacon Flasher Bd 77/78/79, J100-5

RGB LED 79 [Beacon Flasher #3]

J202-9	Not Used	
J202-10	RED-BLU	RGB102 BLU return from RGB Beacon Flasher Bd 77/78/79, J100-10
J202-11	RED-GRY	RGB102 RED return from RGB Beacon Flasher Bd 77/78/79, J100-9
J202-12	RED-GRN	RGB102 GRN return from RGB Beacon Flasher Bd 77/78/79, J100-8

J203 RGB LED Control

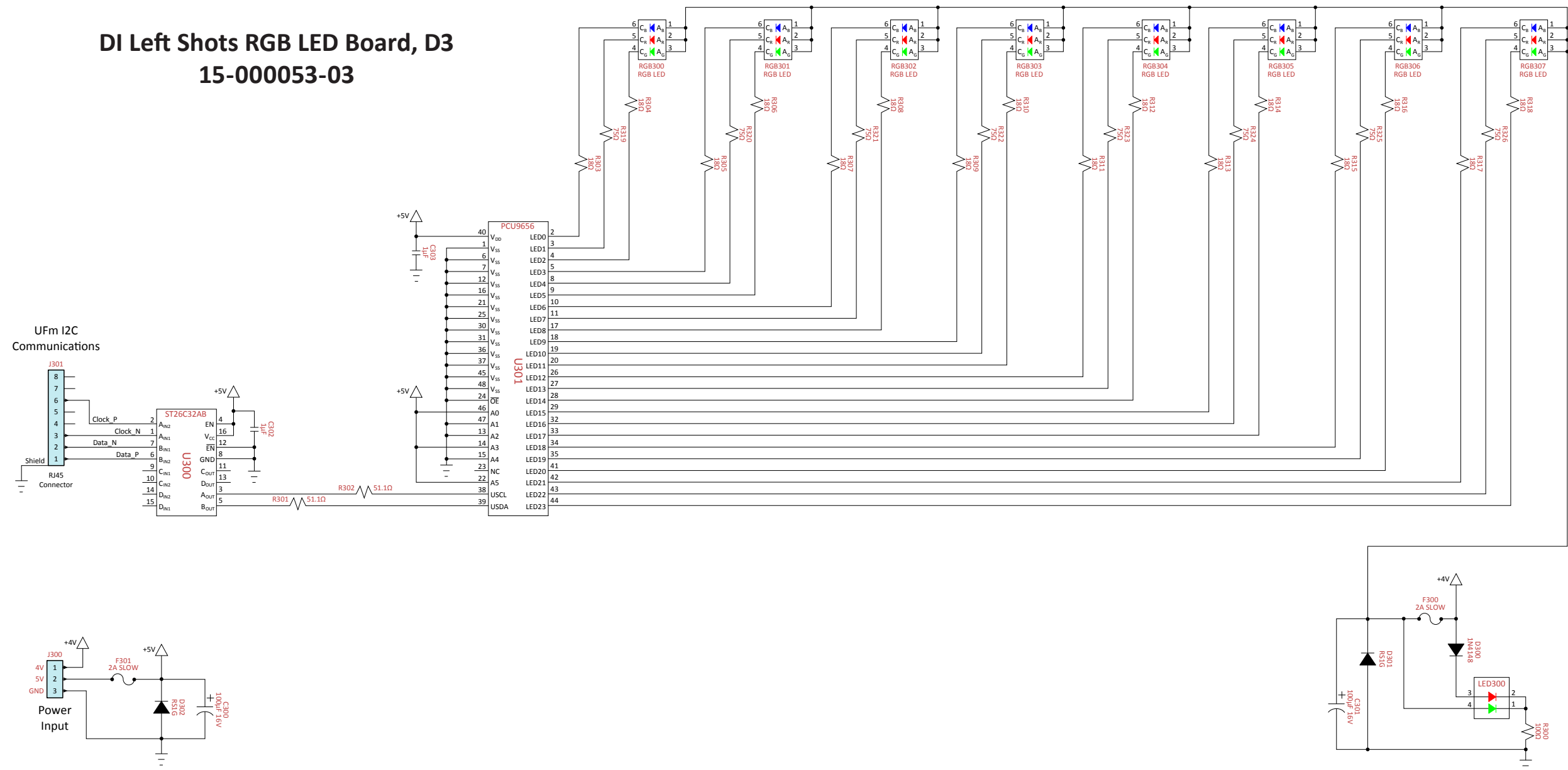
Not Used (Not Populated)

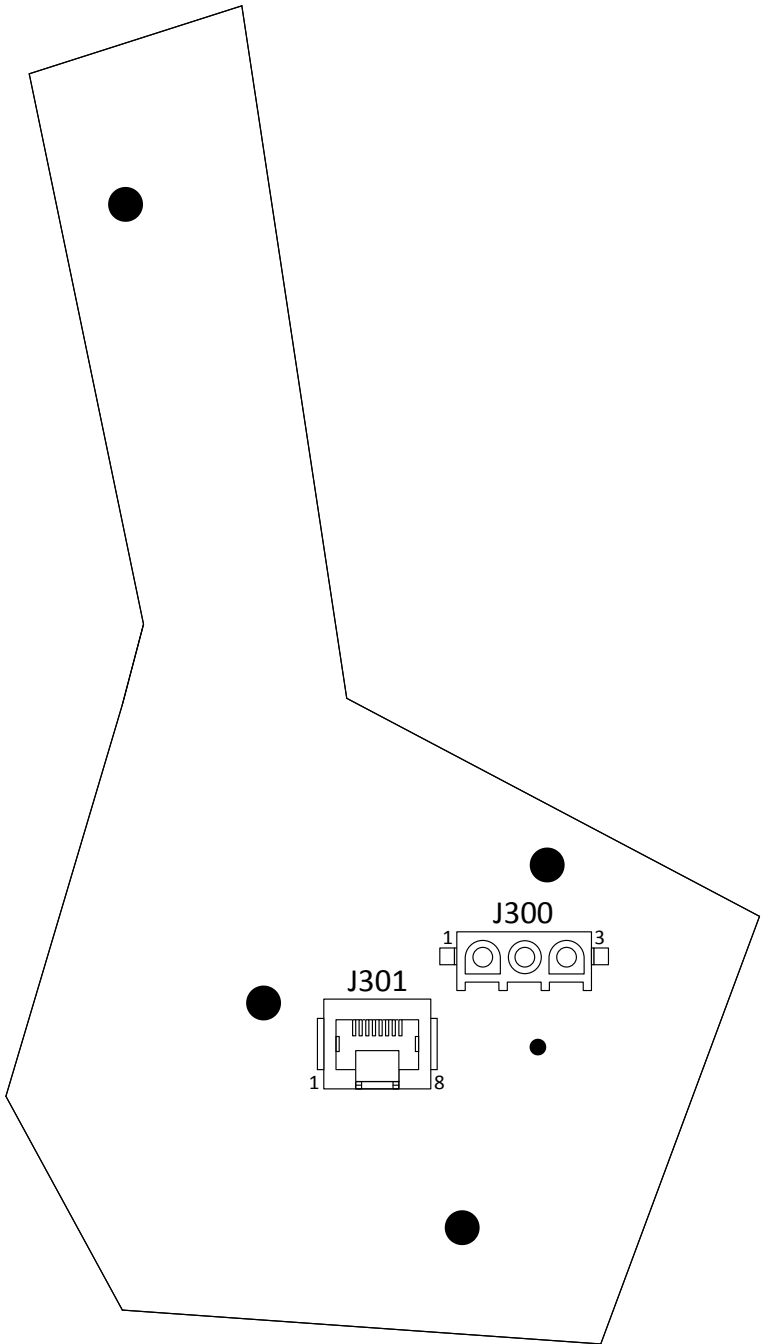


DI Left Shots RGB LED Board, D3  
15-00053-03  
(games manufactured before Nov 1, 2017)

Component(s)	Part Number	Description
C300, C301	109-100M-016	Capacitor, Elect (Radial), 100µF, 16V, 20%
C302, C303	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1µF, 16V, +80%, -20%
D300	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D301, D302	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F300, F301	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED300	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R300	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R301, R302	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R303-R318	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R319-R326	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB300-RGB307	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U300	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U301	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J300	30-2005-03	Header, Male, 3-pin, 6.35mm
J301	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)

# DI Left Shots RGB LED Board, D3 15-000053-03





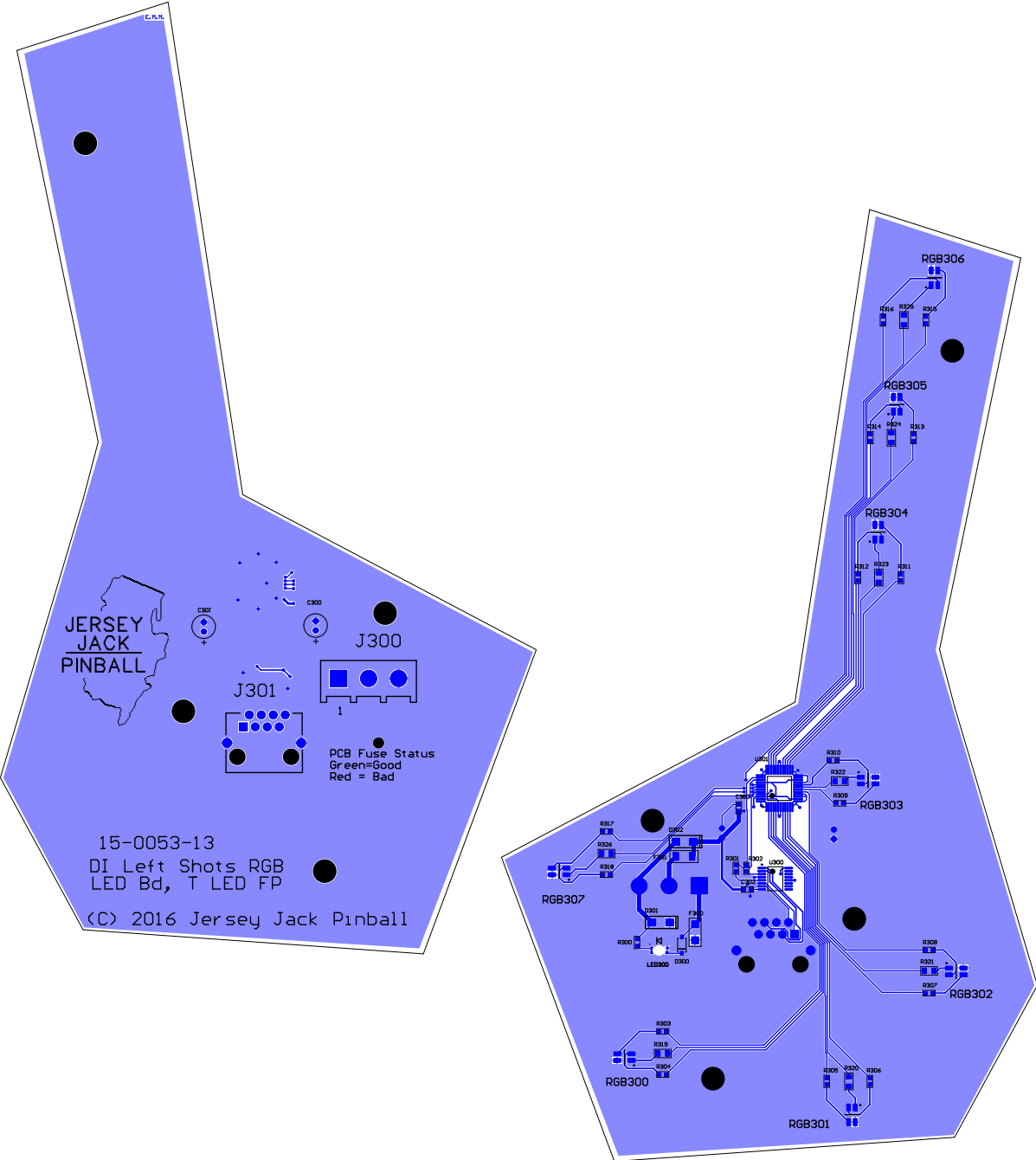
**DI Left Shots RGB LED Board, D3**  
**15-000053-03**  
**Connector Pin-outs**

**J300 Power Input**

J300-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J300-2	RED	+5VDC from Primary ATX Pwr Supply
J300-3	BLK	Ground from 7.5/4VDC Pwr Supply

**J301 UFM I2C Communications**

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J103

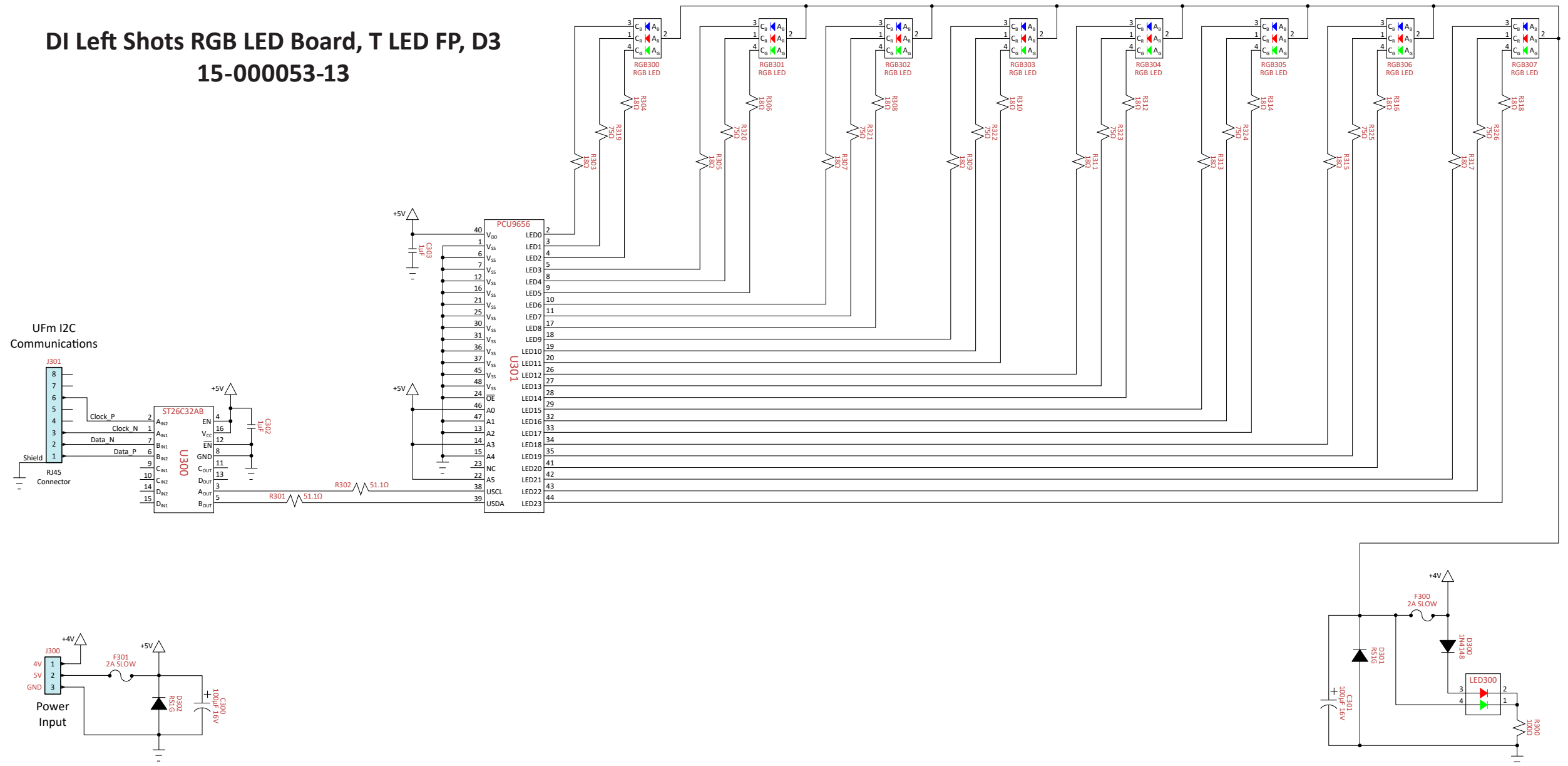


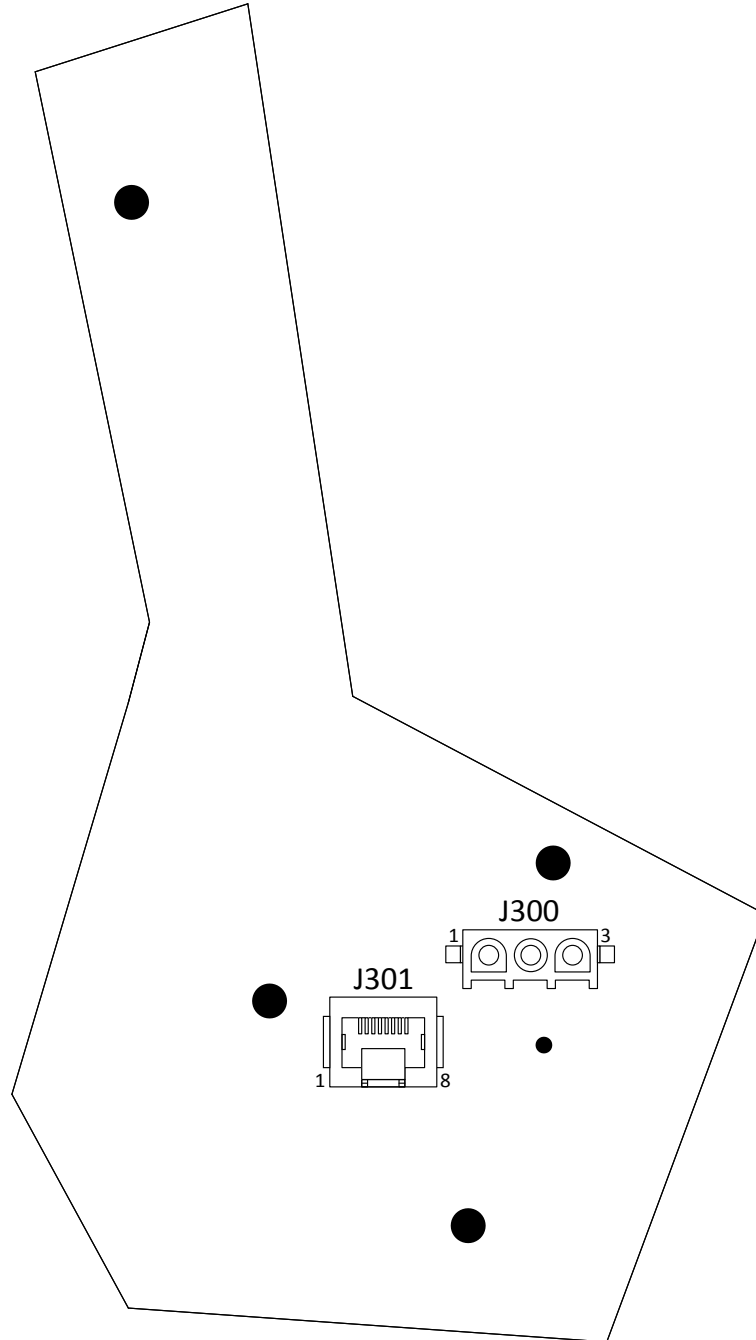
**DI Left Shots RGB LED Board, T LED FP, D3**  
**15-000053-13**  
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C300, C301	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C302, C303	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D300	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D301, D302	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F300, F301	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED300	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R300	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R301, R302	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R303-R318	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R319-R326	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB300-RGB307	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U300	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U301	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J300	30-2005-03	Header, Male, 3-pin, 6.35mm
J301	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)



## D-32





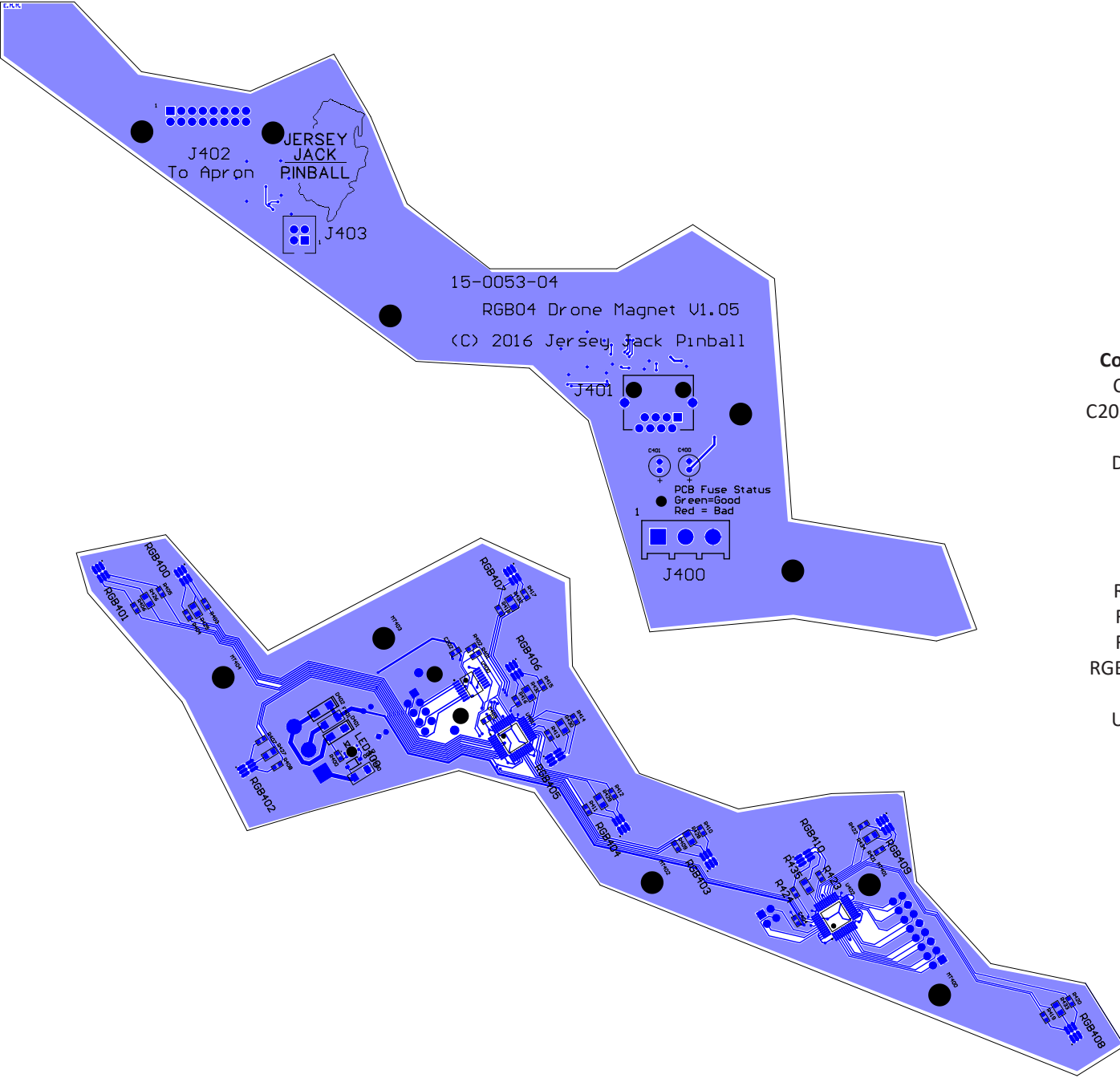
## DI Left Shots RGB LED Board, T LED FP, D3 15-000053-13 Connector Pin-outs

### ***J300 Power Input***

J300-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J300-2	RED	+5VDC from Primary ATX Pwr Supply
J300-3	BLK	Ground from 7.5/4VDC Pwr Supply

### ***J301 UFM I2C Communications***

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J103

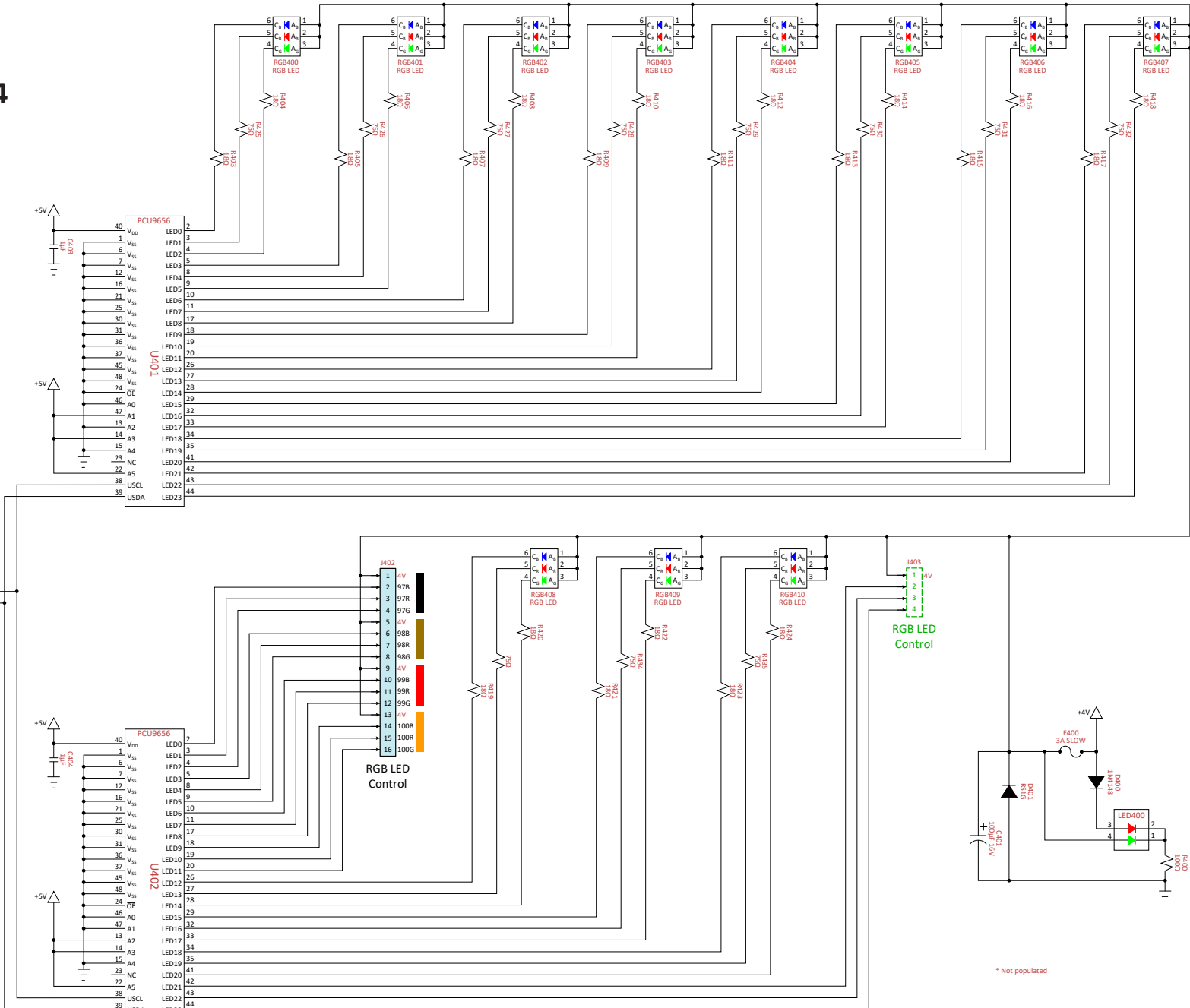
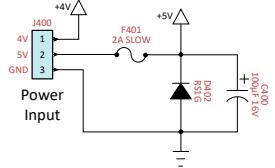
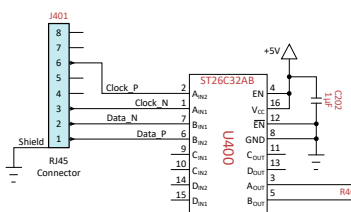


**DI Drone Magnet RGB LED Board, D4**  
**15-000053-04**  
*(games manufactured before Nov 1, 2017)*

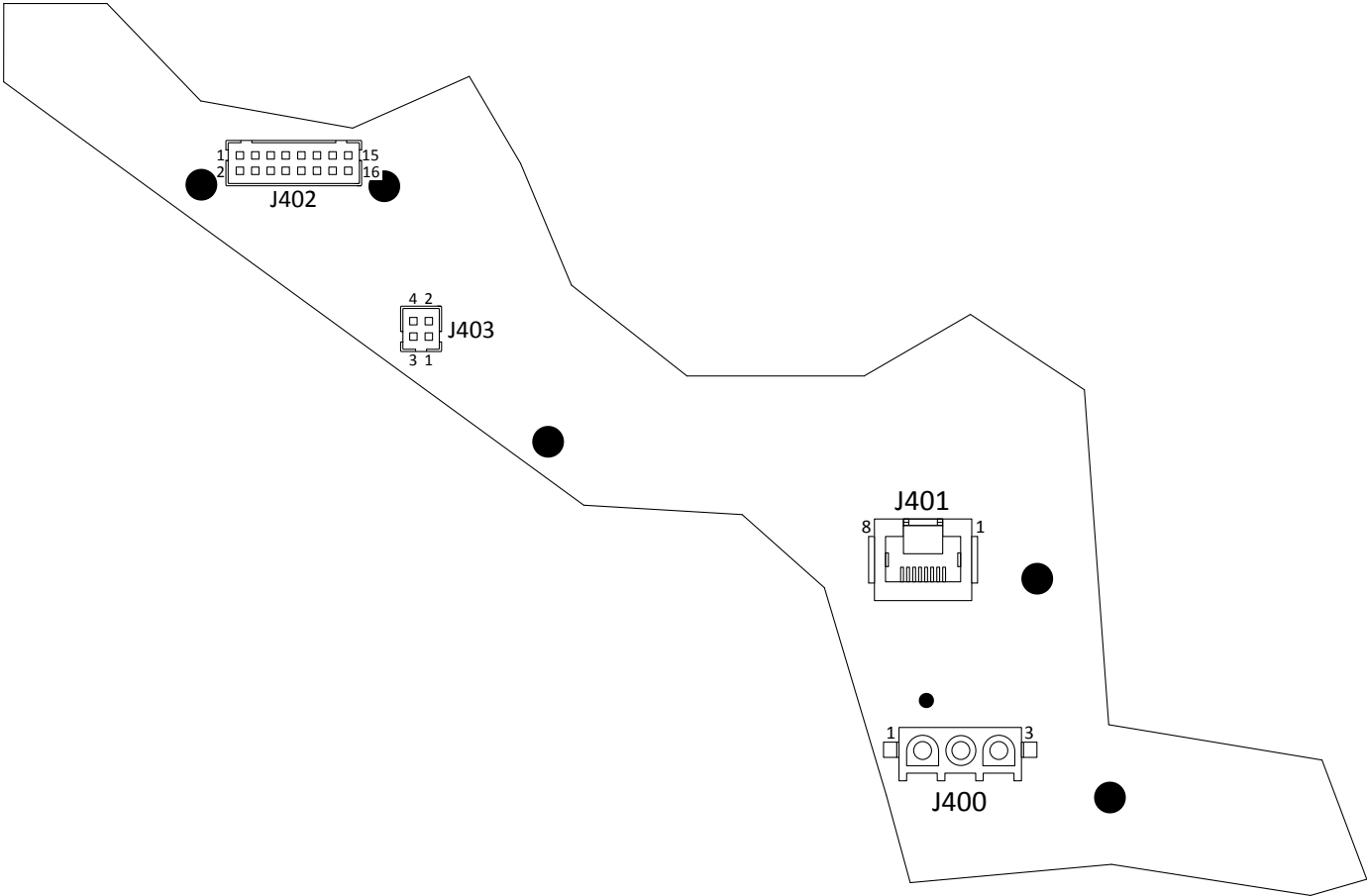
Component(s)	Part Number	Description
C400, C401	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C202, C403, C404	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D400	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D401, D402	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F400	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F401	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED400	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R400	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R401, R402	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R403-R424	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R425-R435	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB400-RGB410	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U400	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U401, U402	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J400	30-2005-03	Header, Male, 3-pin, 6.35mm
J401	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J402	30-2203-16	Header, Male, 16-Pin, 2 Rows, 2.5mm
J403		Not Populated

DI Drone Magnet RGB LED Board, D4  
15-000053-04

UFm I2C  
Communications



DI Drone Magnet RGB LED Board, D4  
15-000053-04  
Connector Pin-outs



J400 Power Input

J400-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J400-2	RED	+5VDC from Primary ATX Pwr Supply
J400-3	BLK	Ground from 7.5/4VDC Pwr Supply

J401 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J104

J402 RGB LED Control (RGB Cable 19-00009030-05)

RGB LED 97 [Bottom Arch #1 (left)]

J402-1	BLK	+4VDC to RGB GI Bd 97, J100-1
J402-2	BLK-BLU	RGB100 BLU return from RGB GI Bd 97, J100-4
J402-3	BLK-RED	RGB100 RED return from RGB GI Bd 97, J100-3
J402-4	BLK-GRN	RGB100 GRN return from RGB GI Bd 97, J100-2

RGB LED 98 [Bottom Arch #2]

J402-5	BRN	+4VDC to RGB GI Bd 98, J100-1
J402-6	BRN-BLU	RGB100 BLU return from RGB GI Bd 98, J100-4
J402-7	BRN-RED	RGB100 RED return from RGB GI Bd 98, J100-3
J402-8	BRN-GRN	RGB100 GRN return from RGB GI Bd 98, J100-2

RGB LED 99 [Bottom Arch #3]

J402-9	RED	+4VDC to RGB GI Bd 99, J100-1
J402-10	RED-BLU	RGB100 BLU return from RGB GI Bd 99, J100-4
J402-11	RED-GRY	RGB100 RED return from RGB GI Bd 99, J100-3
J402-12	RED-GRN	RGB100 GRN return from RGB GI Bd 99, J100-2

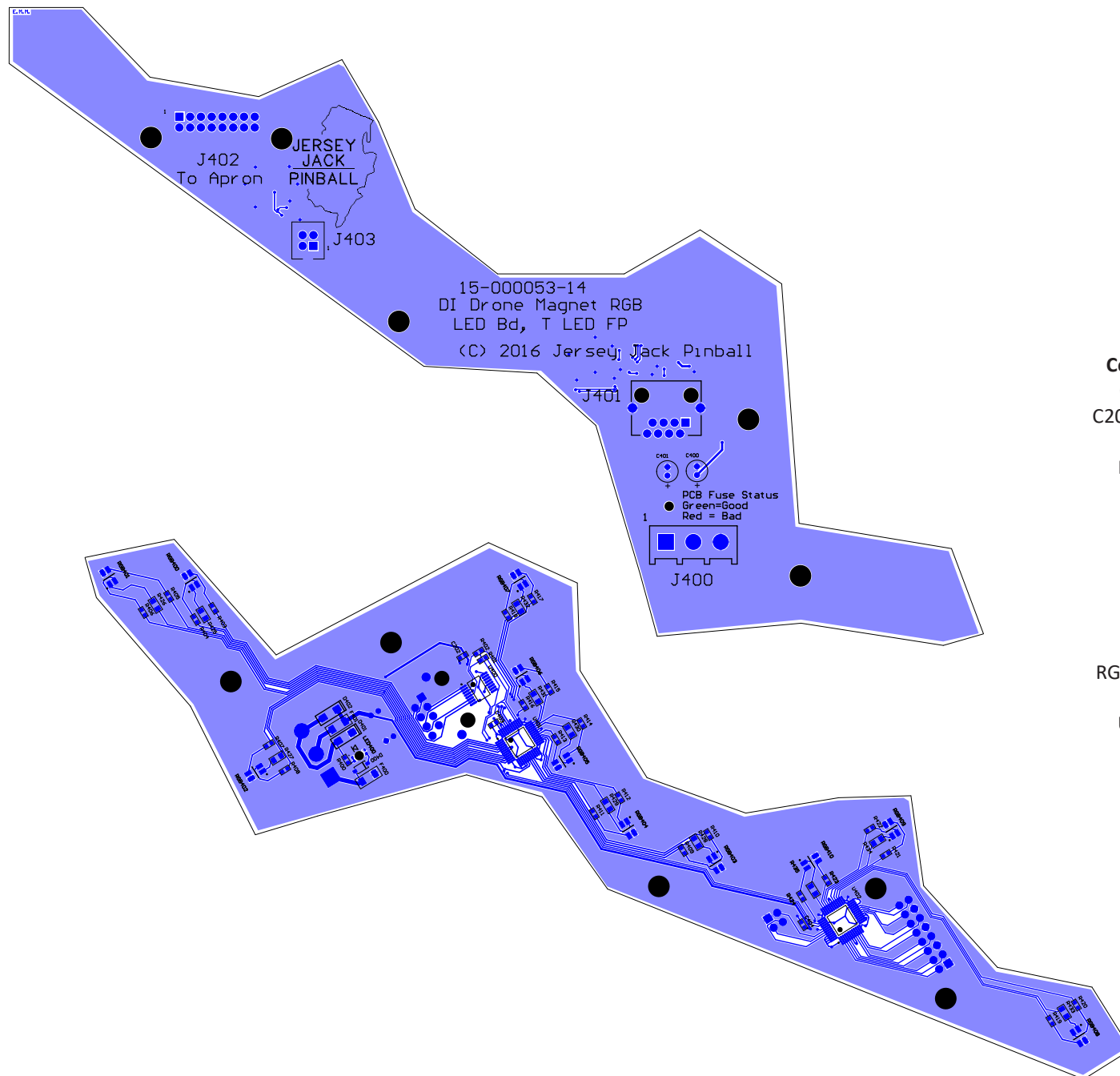
RGB LED 100 [Bottom Arch #4 (right)]

J402-13	ORN	+4VDC to RGB GI Bd 100, J100-1
J402-14	ORN-BLU	RGB100 BLU return from RGB GI Bd 100, J100-4
J402-15	ORN-RED	RGB100 RED return from RGB GI Bd 100, J100-3
J402-16	ORN-GRN	RGB100 GRN return from RGB GI Bd 100, J100-2

J403 RGB LED Control

Not Used (Not Populated)





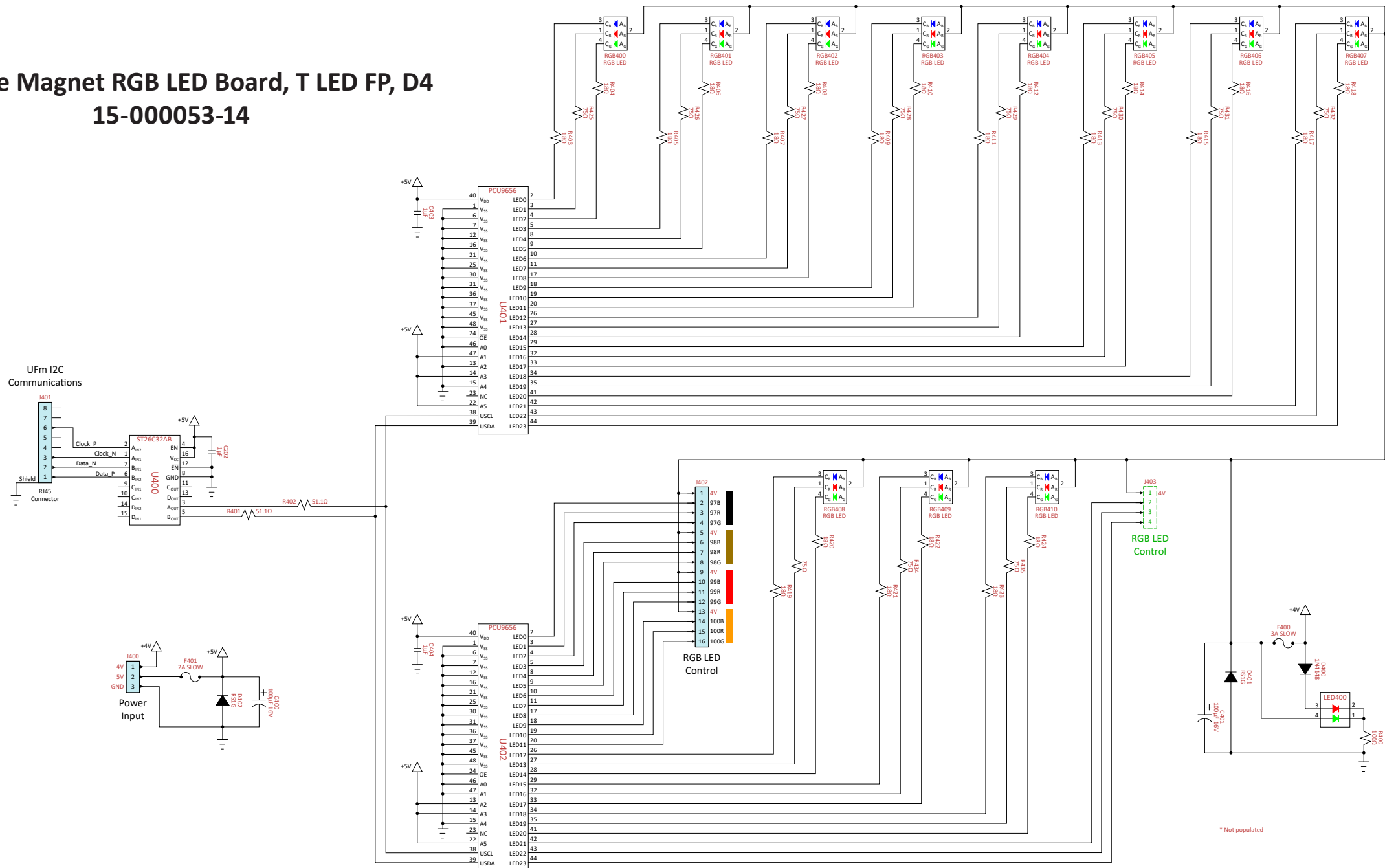
## DI Drone Magnet RGB LED Board, T LED FP, D4

### 15-000053-14

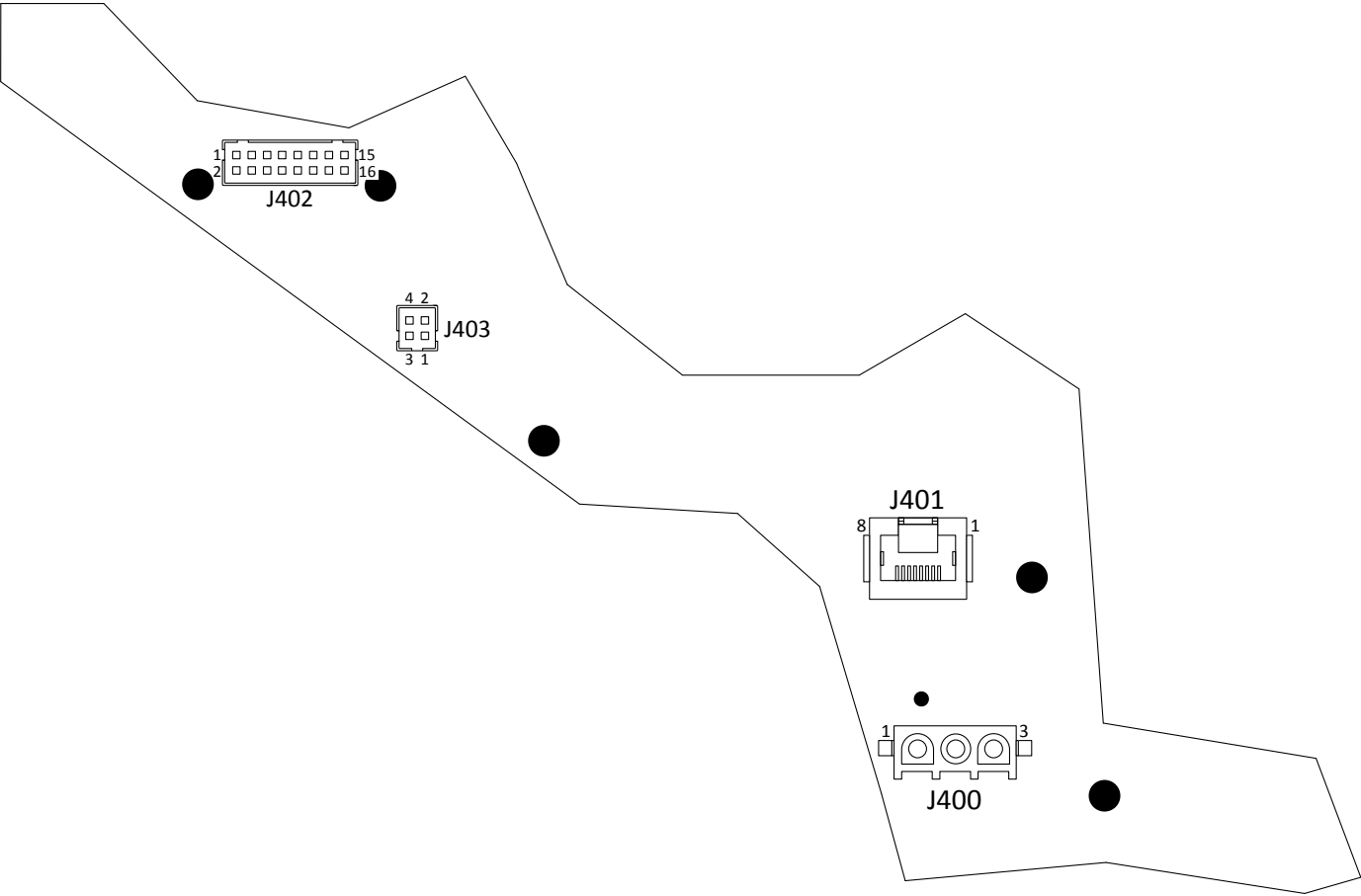
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C400, C401	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C202, C403, C404	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D400	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D401, D402	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F400	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F401	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED400	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R400	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R401, R402	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R403-R424	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R425-R435	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB400-RGB410	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U400	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U401, U402	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J400	30-2005-03	Header, Male, 3-pin, 6.35mm
J401	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J402	30-2203-16	Header, Male, 16-Pin, 2 Rows, 2.5mm
J403		Not Populated

**DI Drone Magnet RGB LED Board, T LED FP, D4  
15-000053-14**



DI Drone Magnet RGB LED Board, T LED FP, D4  
15-000053-14  
Connector Pin-outs



J400 Power Input

J400-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J400-2	RED	+5VDC from Primary ATX Pwr Supply
J400-3	BLK	Ground from 7.5/4VDC Pwr Supply

J401 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J104

J402 RGB LED Control (RGB Cable 19-00009030-05)

RGB LED 97 [Bottom Arch #1 (left)]

J402-1	BLK	+4VDC to RGB GI Bd 97, J100-1
J402-2	BLK-BLU	RGB100 BLU return from RGB GI Bd 97, J100-4
J402-3	BLK-RED	RGB100 RED return from RGB GI Bd 97, J100-3
J402-4	BLK-GRN	RGB100 GRN return from RGB GI Bd 97, J100-2

RGB LED 98 [Bottom Arch #2]

J402-5	BRN	+4VDC to RGB GI Bd 98, J100-1
J402-6	BRN-BLU	RGB100 BLU return from RGB GI Bd 98, J100-4
J402-7	BRN-RED	RGB100 RED return from RGB GI Bd 98, J100-3
J402-8	BRN-GRN	RGB100 GRN return from RGB GI Bd 98, J100-2

RGB LED 99 [Bottom Arch #3]

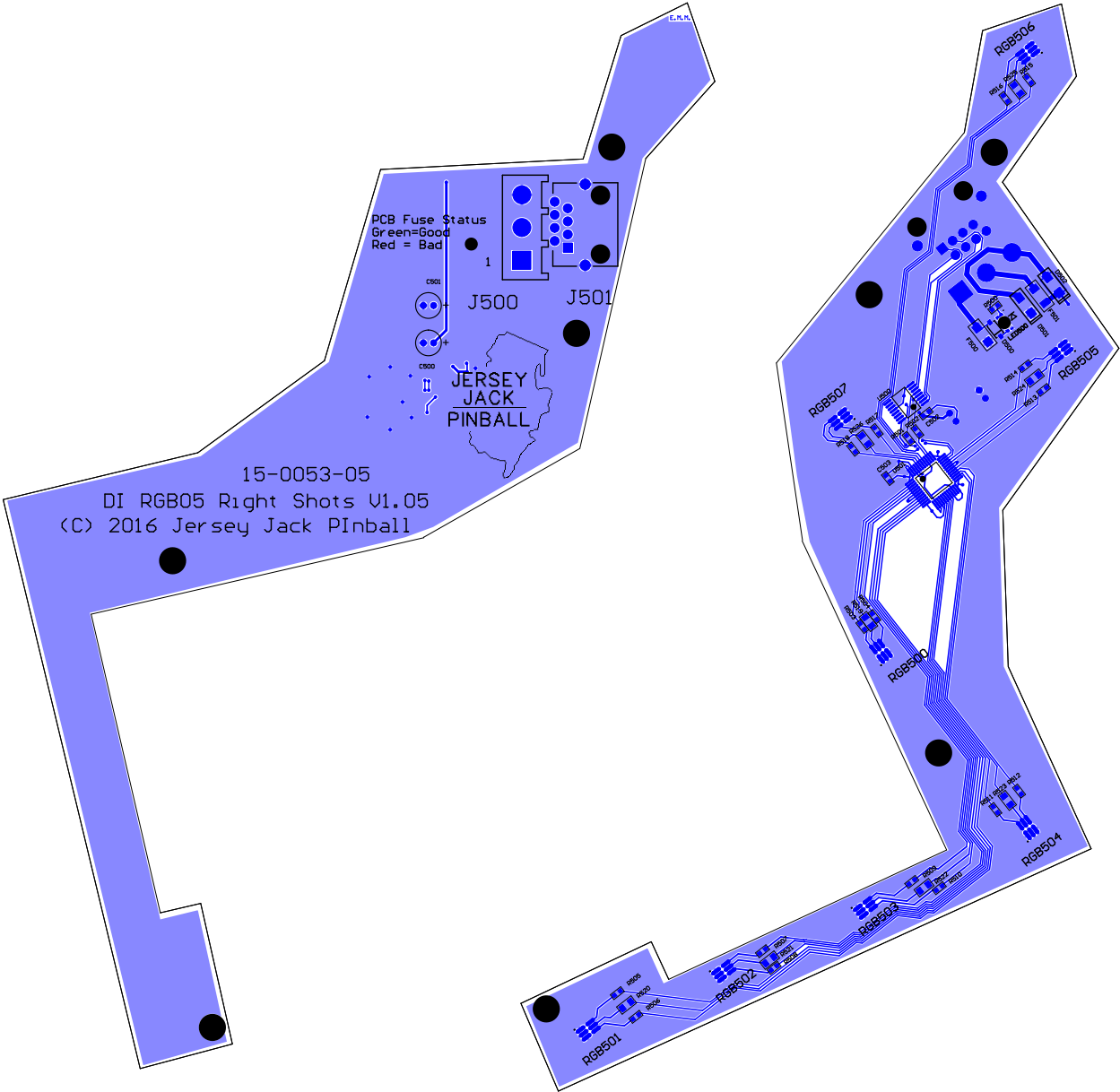
J402-9	RED	+4VDC to RGB GI Bd 99, J100-1
J402-10	RED-BLU	RGB100 BLU return from RGB GI Bd 99, J100-4
J402-11	RED-GRY	RGB100 RED return from RGB GI Bd 99, J100-3
J402-12	RED-GRN	RGB100 GRN return from RGB GI Bd 99, J100-2

RGB LED 100 [Bottom Arch #4 (right)]

J402-13	ORN	+4VDC to RGB GI Bd 100, J100-1
J402-14	ORN-BLU	RGB100 BLU return from RGB GI Bd 100, J100-4
J402-15	ORN-RED	RGB100 RED return from RGB GI Bd 100, J100-3
J402-16	ORN-GRN	RGB100 GRN return from RGB GI Bd 100, J100-2

J403 RGB LED Control

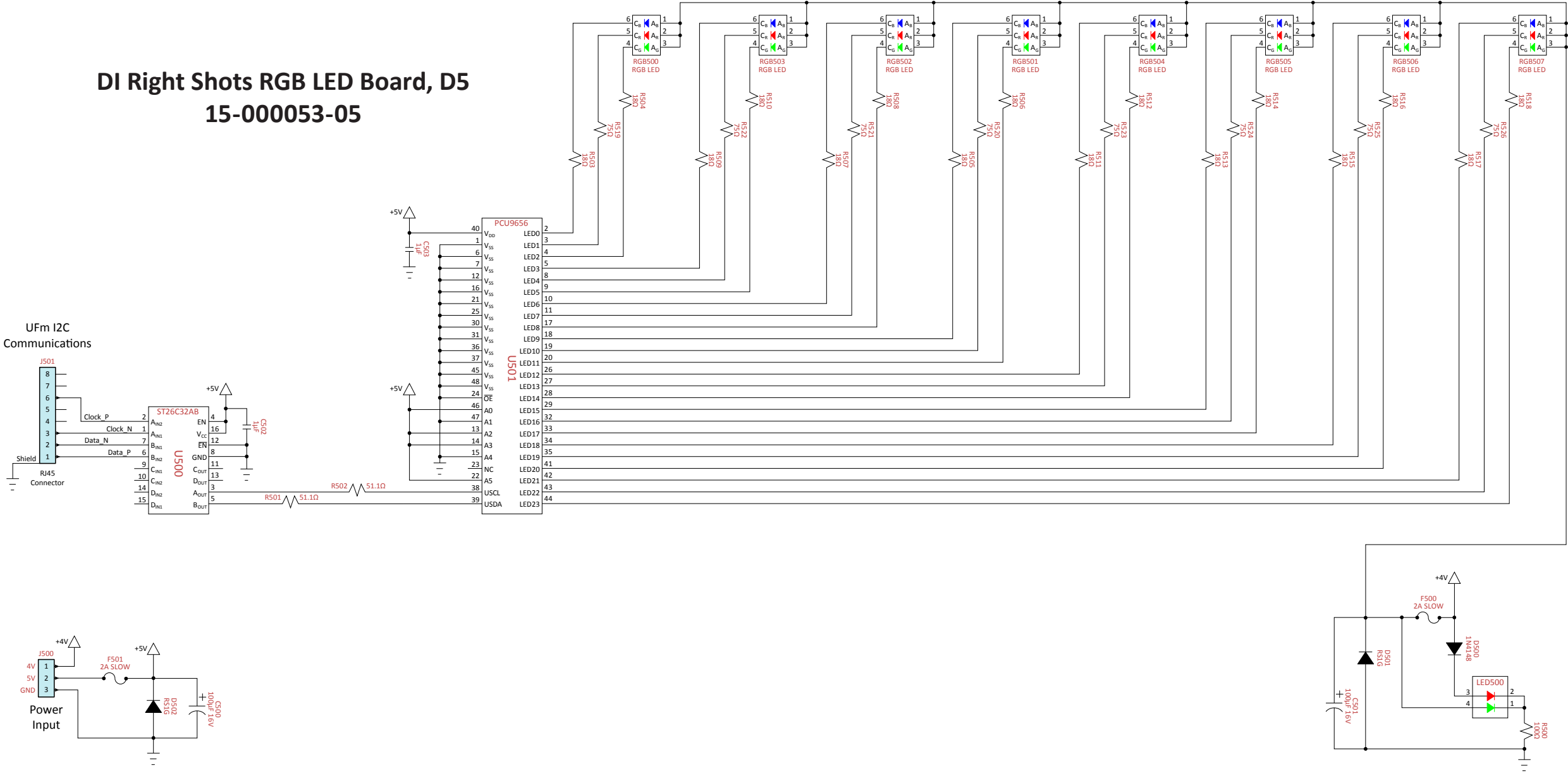
Not Used (Not Populated)



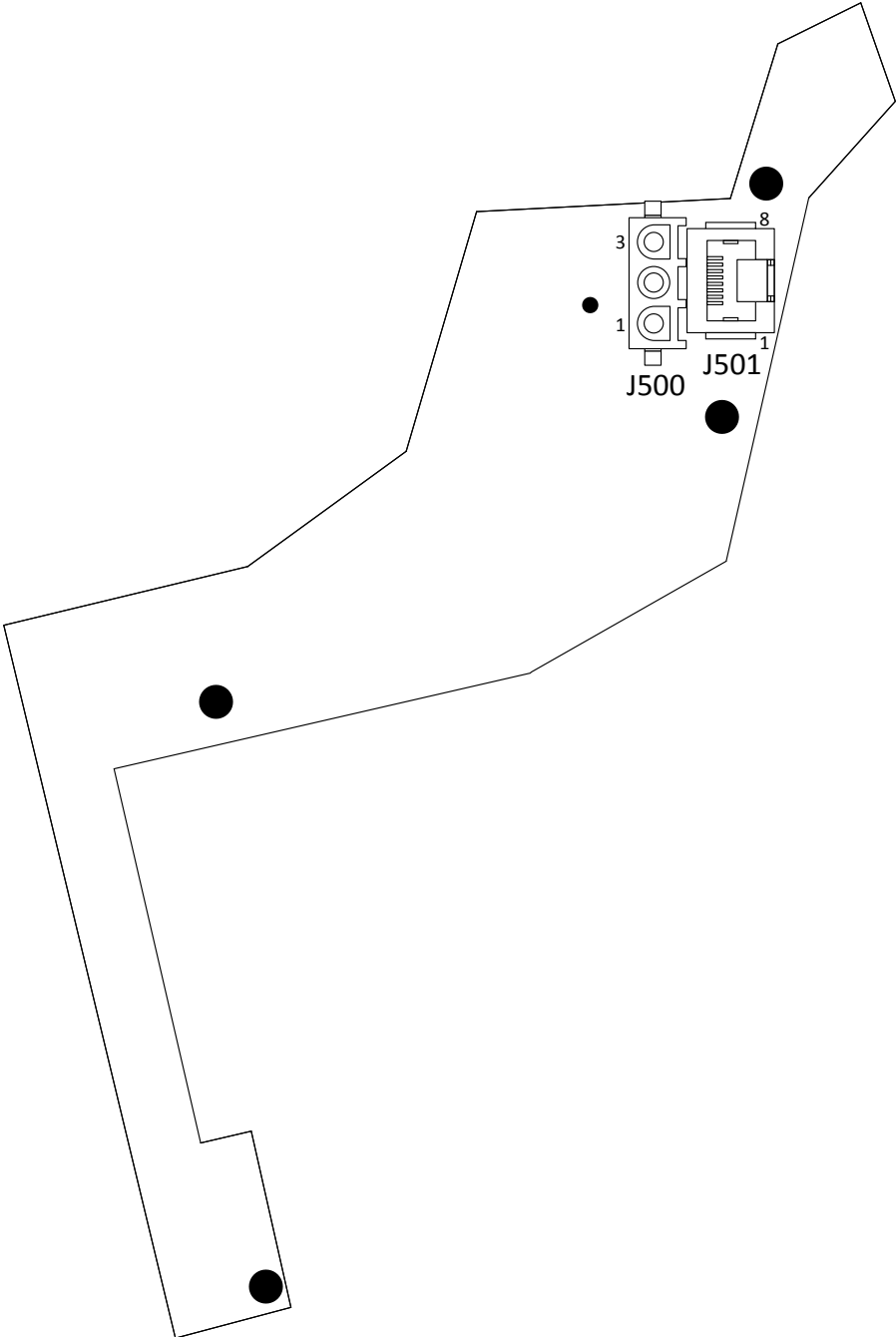
**DI Right Shots RGB LED Board, D5**  
**15-000053-05**  
*(games manufactured before Nov 1, 2017)*

Component(s)	Part Number	Description
C500, C501	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C502, C503	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D500	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D501, D502	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F500, F501	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED500	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R500	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R501, R502	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R503-R518	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R519-R526	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB500-RGB507	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U500	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U501	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J500	30-2005-03	Header, Male, 3-pin, 6.35mm
J501	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)

DI Right Shots RGB LED Board, D5  
15-000053-05







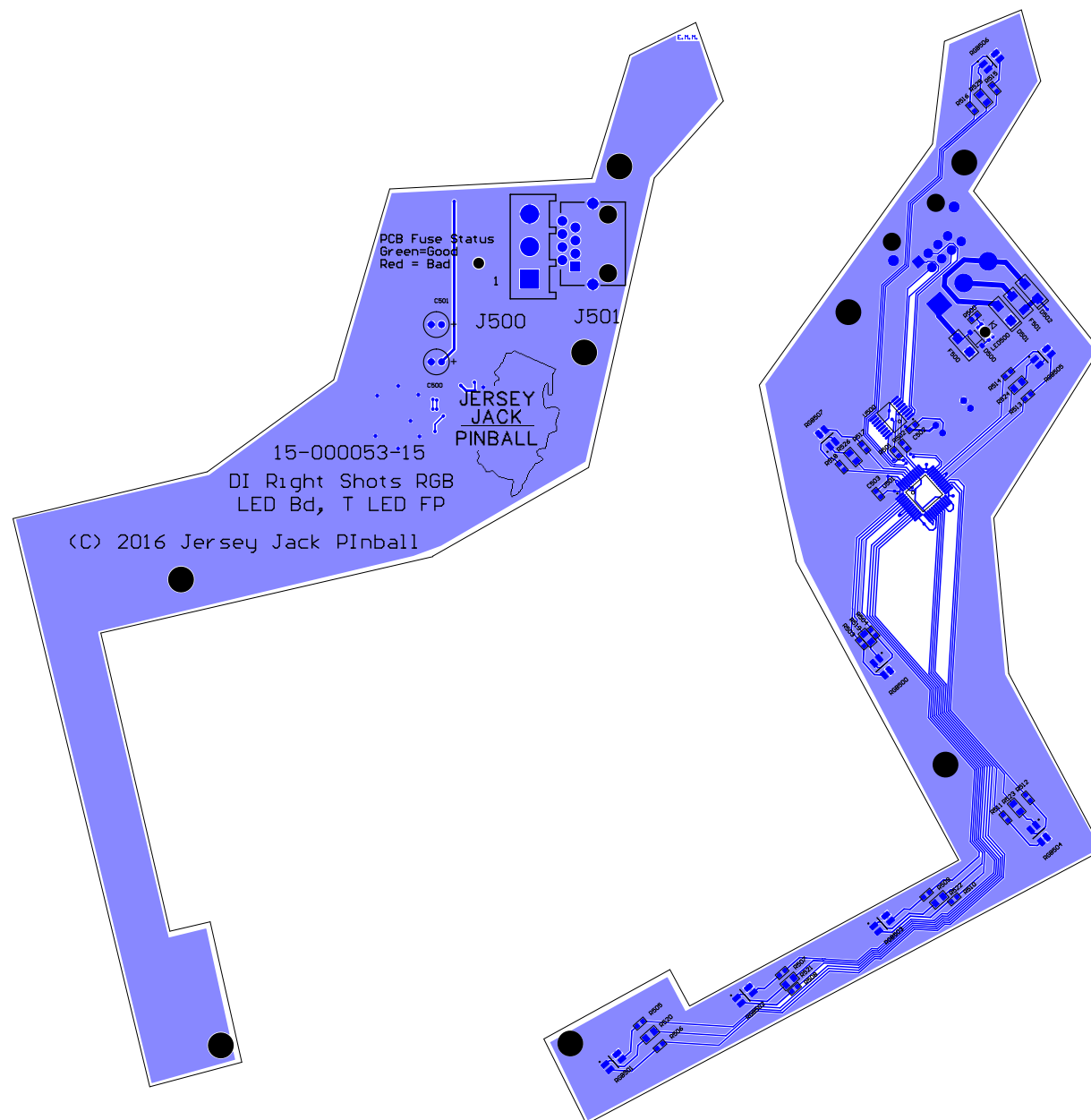
**DI Right Shots RGB LED Board, D5**  
**15-000053-05**  
**Connector Pin-outs**

***J500 Power Input***

J500-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J500-2	RED	+5VDC from Primary ATX Pwr Supply
J500-3	BLK	Ground from 7.5/4VDC Pwr Supply

***J501 UFM I2C Communications***

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J105



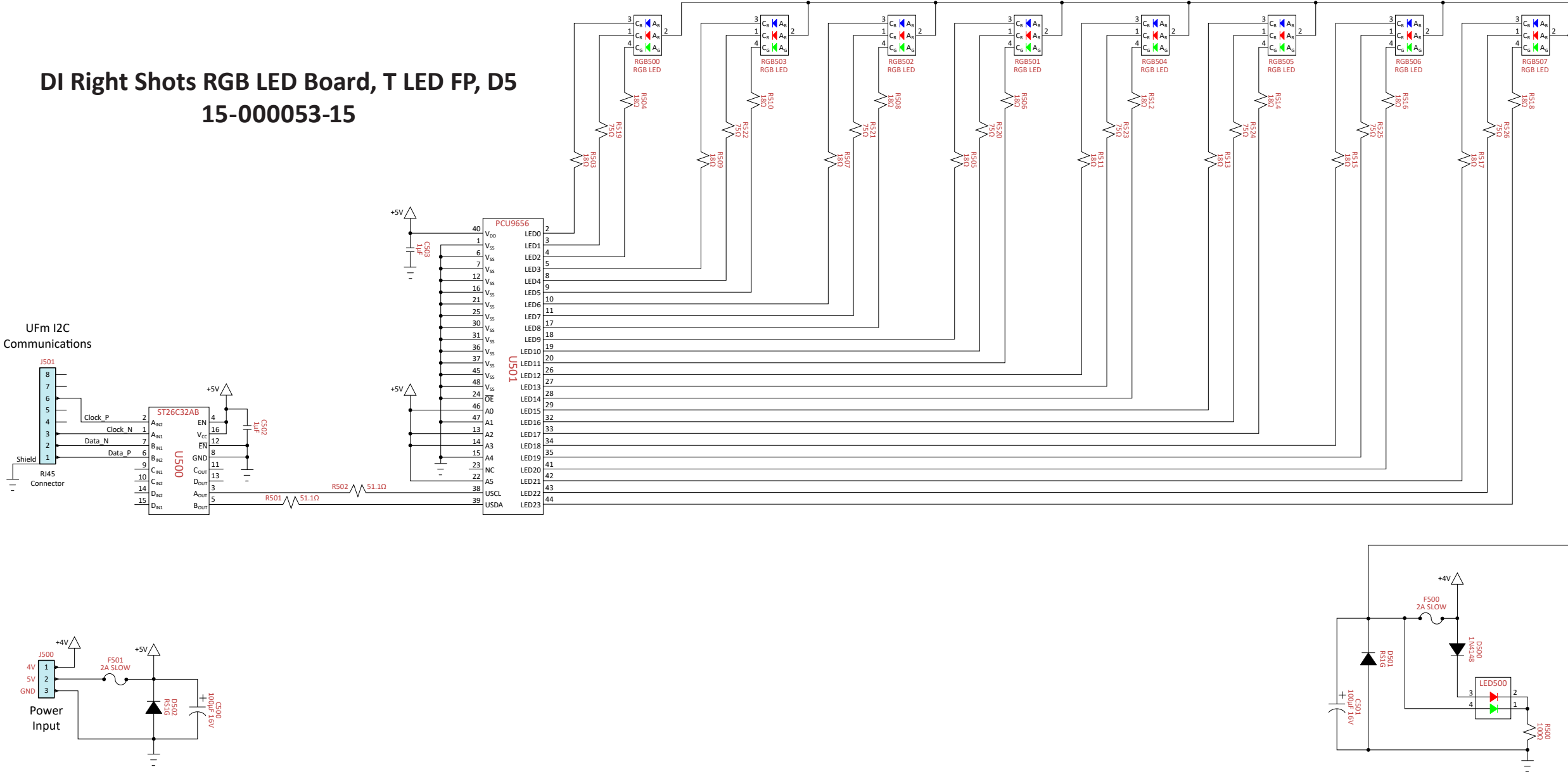
## DI Right Shots RGB LED Board, T LED FP, D5

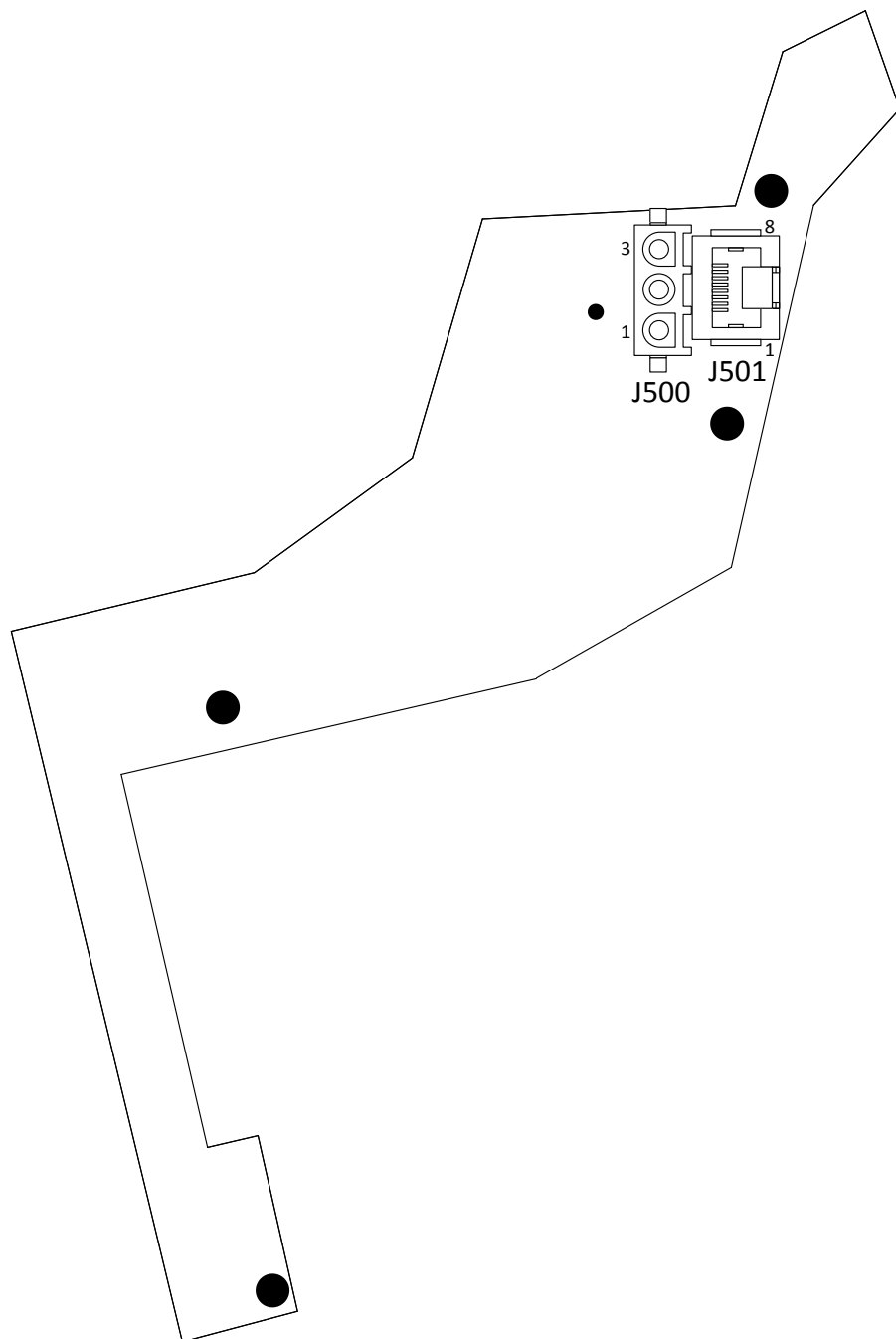
### 15-000053-15

*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C500, C501	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C502, C503	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D500	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D501, D502	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F500, F501	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED500	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R500	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R501, R502	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R503-R518	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R519-R526	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB500-RGB507	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U500	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U501	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J500	30-2005-03	Header, Male, 3-pin, 6.35mm
J501	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)

# DI Right Shots RGB LED Board, T LED FP, D5 15-000053-15





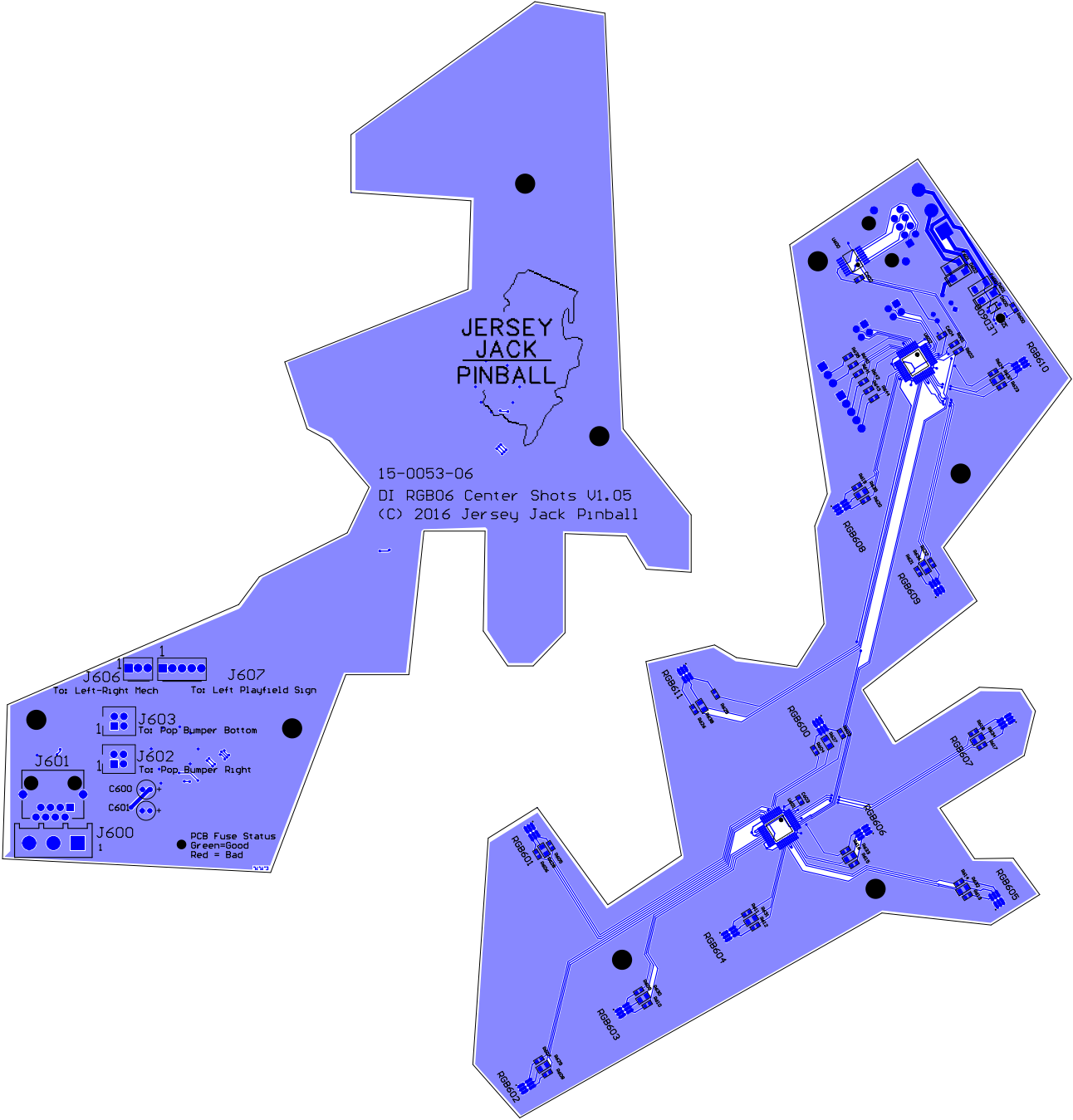
## DI Right Shots RGB LED Board, T LED FP, D5 15-000053-15 Connector Pin-outs

### ***J500 Power Input***

J500-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J500-2	RED	+5VDC from Primary ATX Pwr Supply
J500-3	BLK	Ground from 7.5/4VDC Pwr Supply

### ***J501 UFM I2C Communications***

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J105

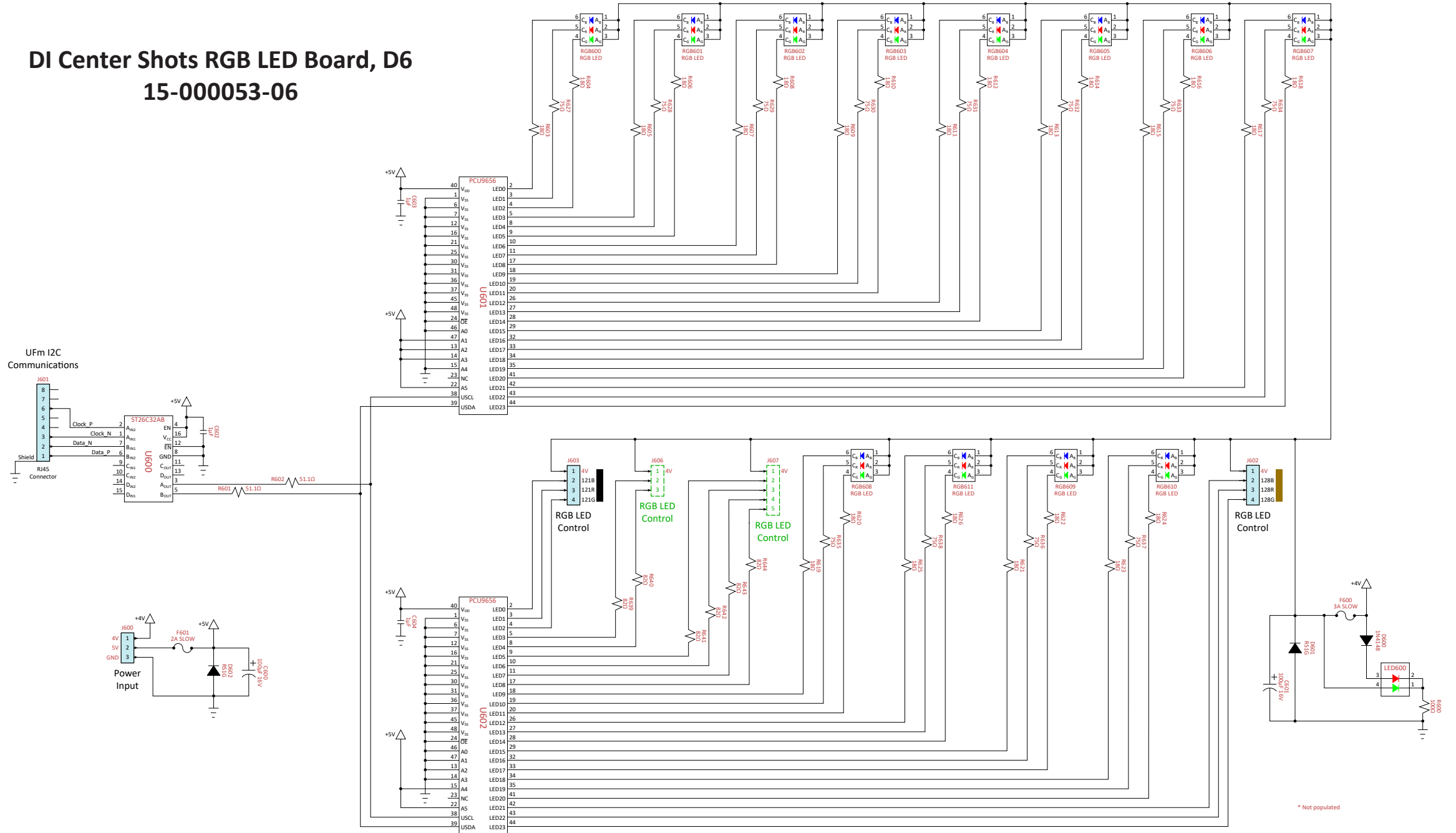


DI Center Shots RGB LED Board, D6  
15-000053-06  
(games manufactured before Nov 1, 2017)

Component(s)	Part Number	Description
C600, C601	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C602-C604	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D600	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D601, D602	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F600	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F601	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED600	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R600	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R601, R602	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R603-R626	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R627-R638	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
R639-R644	122-0082-252	Resistor, 0603 SMT, 82Ω, 0.25W, 1%
RGB600-RGB611	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U600	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U601, U602	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J600	30-2005-03	Header, Male, 3-pin, 6.35mm
J601	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J602, J603	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm
J606, J607		Not Populated



**DI Center Shots RGB LED Board, D6  
15-000053-06**



DI Center Shots RGB LED Board, D6  
15-000053-06  
Connector Pin-outs

J600 Power Input

J600-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J600-2	RED	+5VDC from Primary ATX Pwr Supply
J600-3	BLK	Ground from 7.5/4VDC Pwr Supply

J601 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J106

J602 RGB LED Control (RGB Cable 19-00009030-56)

RGB LED 128 [Right Pop Bumper]

J602-1	BLK	+4VDC to RGB GI Bd 97, J100-1
J602-2	BLK-BLU	RGB100 BLU return from RGB GI Bd 128, J100-4
J602-3	BLK-RED	RGB100 RED return from RGB GI Bd 128, J100-3
J602-4	BLK-GRN	RGB100 GRN return from RGB GI Bd 128, J100-2

J603 RGB LED Control (RGB Cable 19-00009030-55)

RGB LED 121 [Lower Pop Bumper]

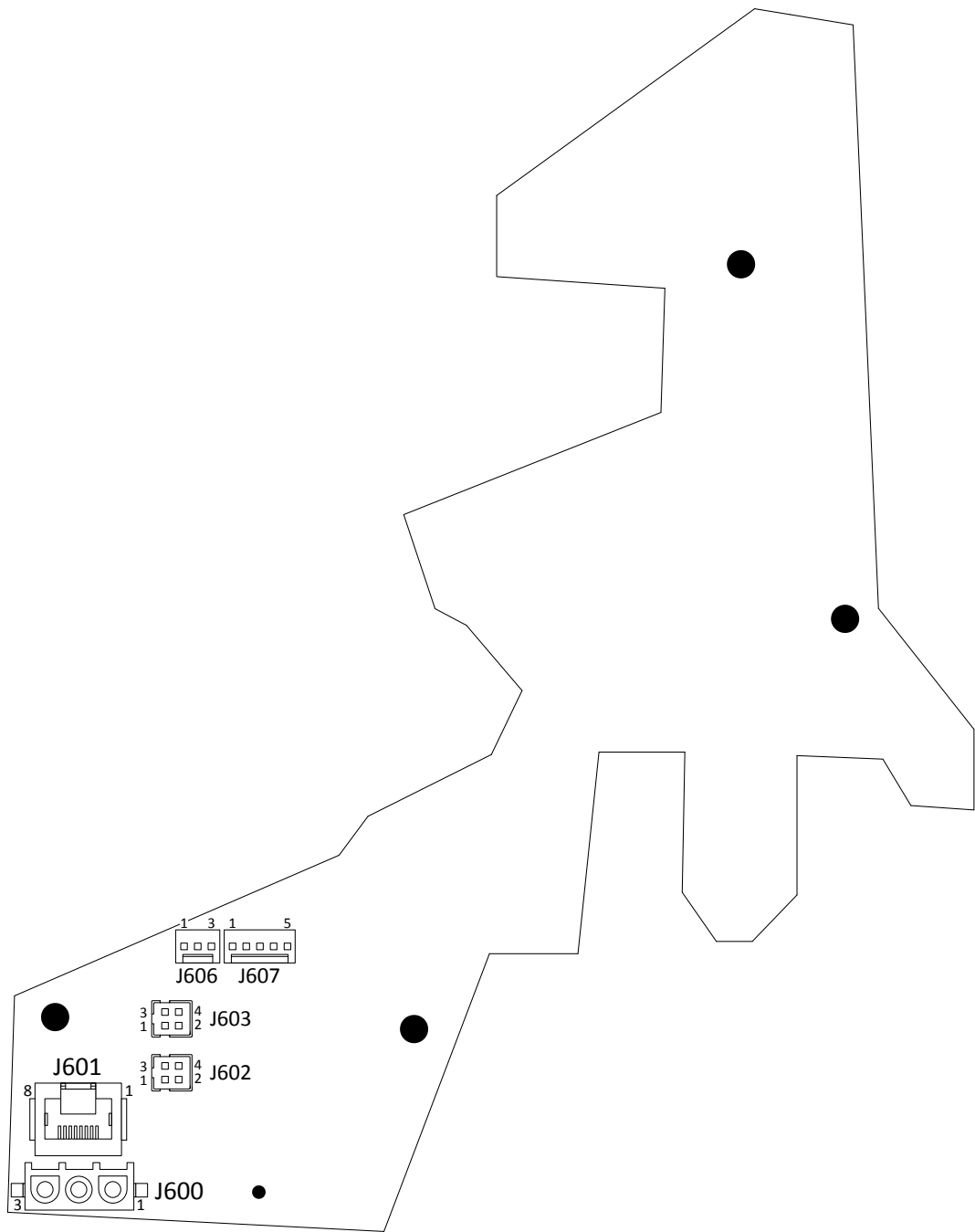
J603-1	BRN	+4VDC to RGB GI Bd 98, J100-1
J603-2	BRN-BLU	RGB100 BLU return from RGB GI Bd 121, J100-4
J603-3	BRN-RED	RGB100 RED return from RGB GI Bd 121, J100-3
J603-4	BRN-GRN	RGB100 GRN return from RGB GI Bd 121, J100-2

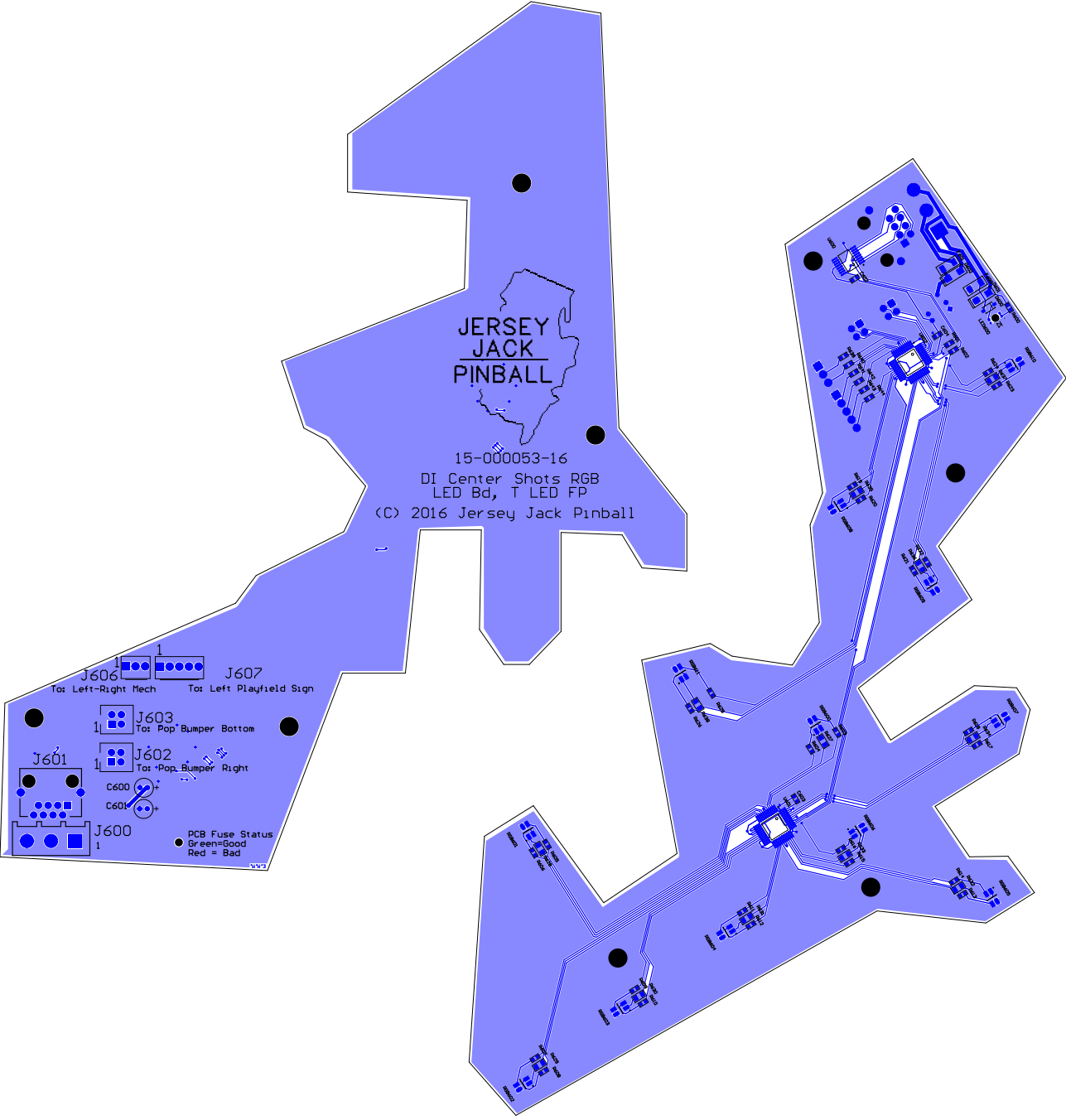
J606 RGB LED Control

Not Used (Not Populated)

J607 RGB LED Control

Not Used (Not Populated)

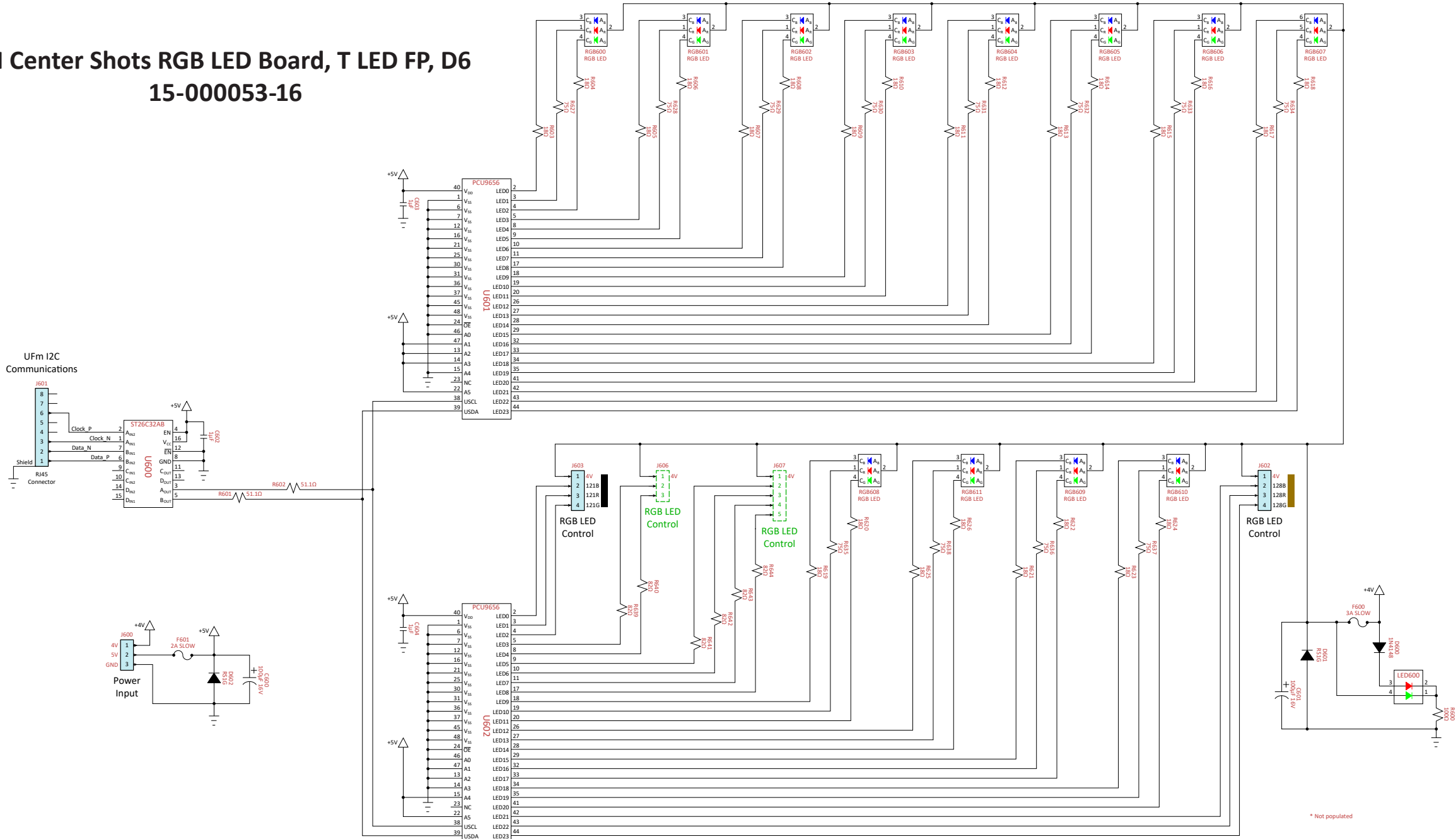


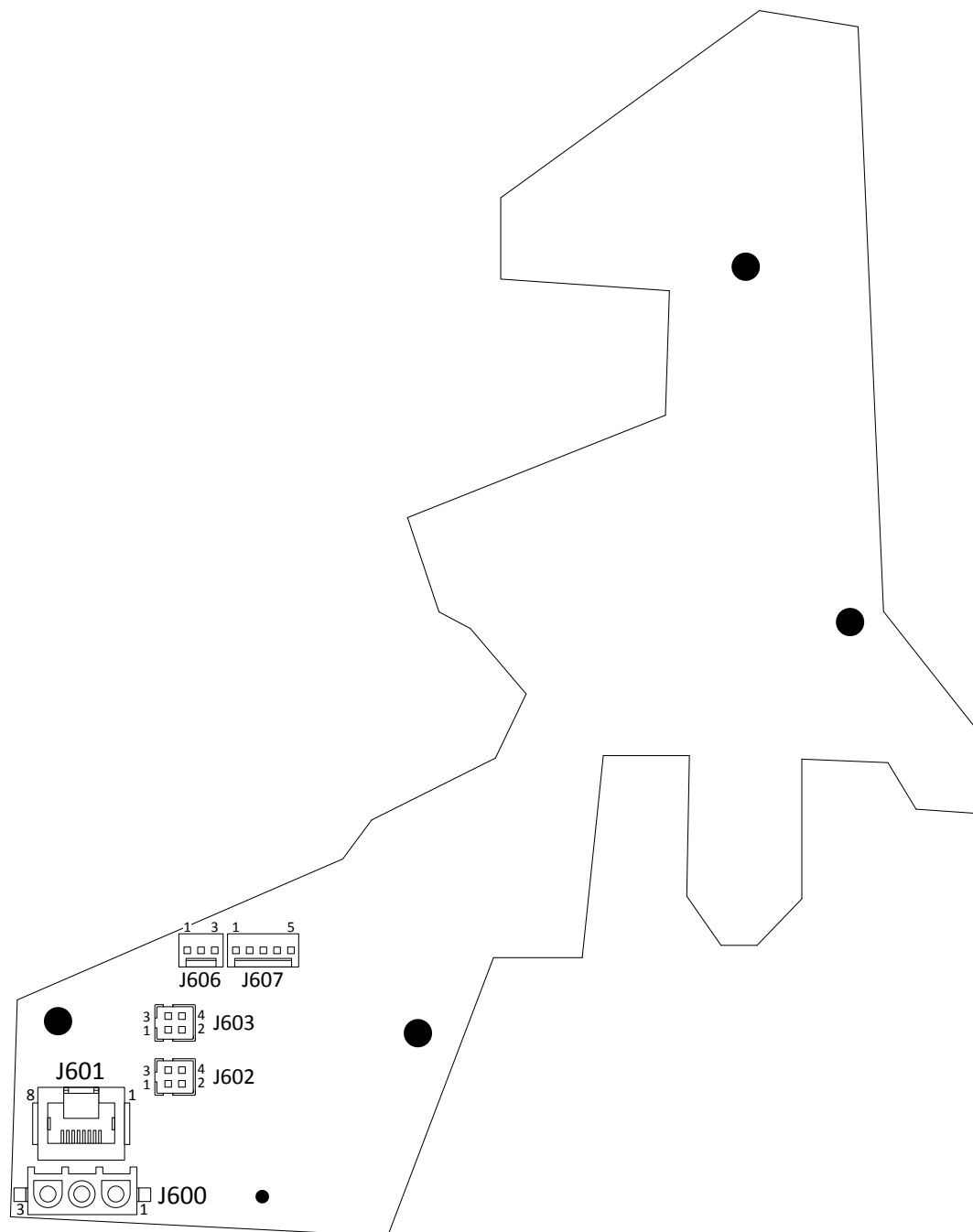


**DI Center Shots RGB LED Board, T LED FP, D6**  
**15-000053-16**  
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C600, C601	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C602-C604	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D600	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D601, D602	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F600	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
F601	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED600	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R600	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R601, R602	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R603-R626	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R627-R638	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
R639-R644	122-0082-252	Resistor, 0603 SMT, 82Ω, 0.25W, 1%
RGB600-RGB611	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U600	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U601, U602	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J600	30-2005-03	Header, Male, 3-pin, 6.35mm
J601	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J602, J603	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm
J606, J607		Not Populated

DI Center Shots RGB LED Board, T LED FP, D6  
15-000053-16





## DI Center Shots RGB LED Board, T LED FP, D6

### 15-000053-16

#### Connector Pin-outs

#### **J600 Power Input**

J600-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J600-2	RED	+5VDC from Primary ATX Pwr Supply
J600-3	BLK	Ground from 7.5/4VDC Pwr Supply

#### **J601 UFM I2C Communications**

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J106

#### **J602 RGB LED Control (RGB Cable 19-00009030-56)**

RGB LED 128 [Right Pop Bumper]

J602-1	BLK	+4VDC to RGB GI Bd 97, J100-1
J602-2	BLK-BLU	RGB100 BLU return from RGB GI Bd 128, J100-4
J602-3	BLK-RED	RGB100 RED return from RGB GI Bd 128, J100-3
J602-4	BLK-GRN	RGB100 GRN return from RGB GI Bd 128, J100-2

#### **J603 RGB LED Control (RGB Cable 19-00009030-55)**

RGB LED 121 [Lower Pop Bumper]

J603-1	BRN	+4VDC to RGB GI Bd 98, J100-1
J603-2	BRN-BLU	RGB100 BLU return from RGB GI Bd 121, J100-4
J603-3	BRN-RED	RGB100 RED return from RGB GI Bd 121, J100-3
J603-4	BRN-GRN	RGB100 GRN return from RGB GI Bd 121, J100-2

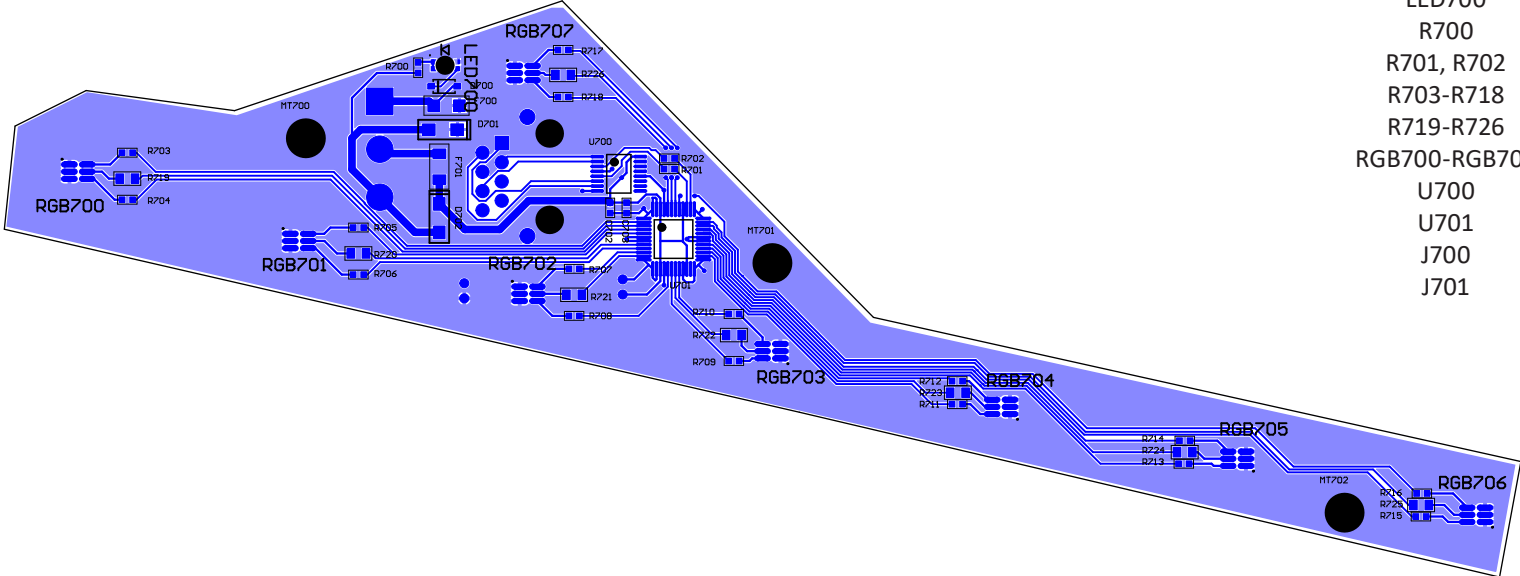
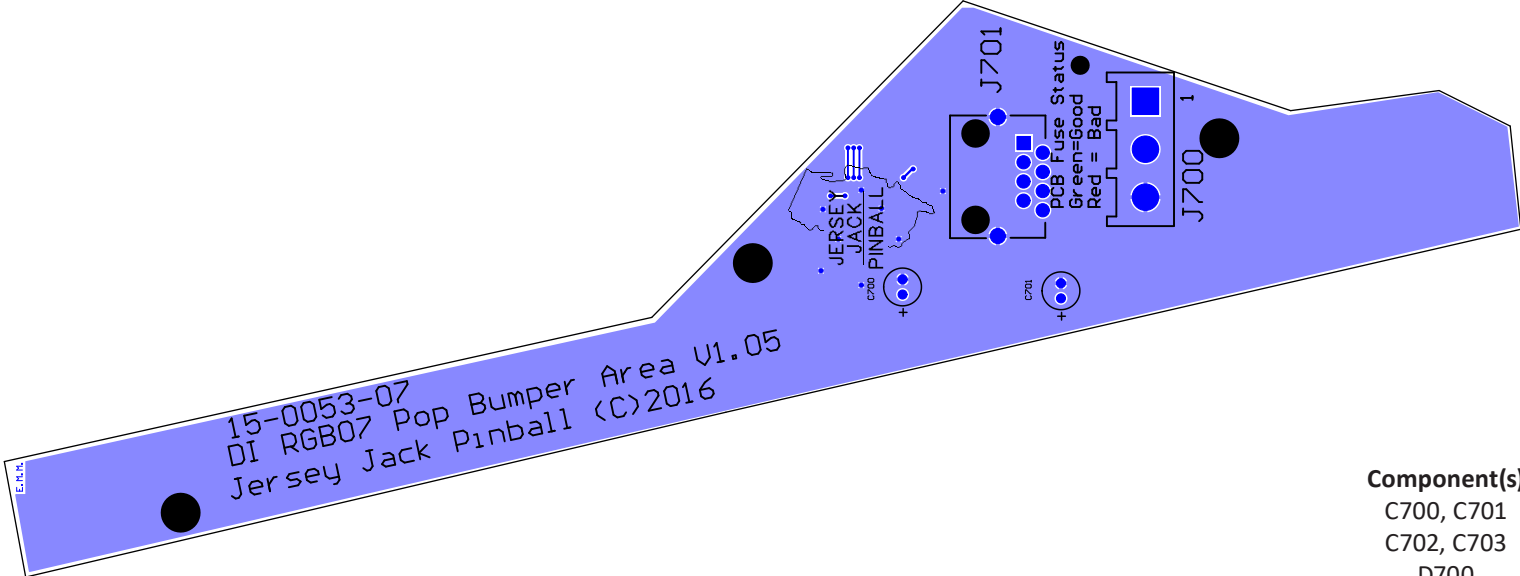
#### **J606 RGB LED Control**

Not Used (Not Populated)

#### **J607 RGB LED Control**

Not Used (Not Populated)

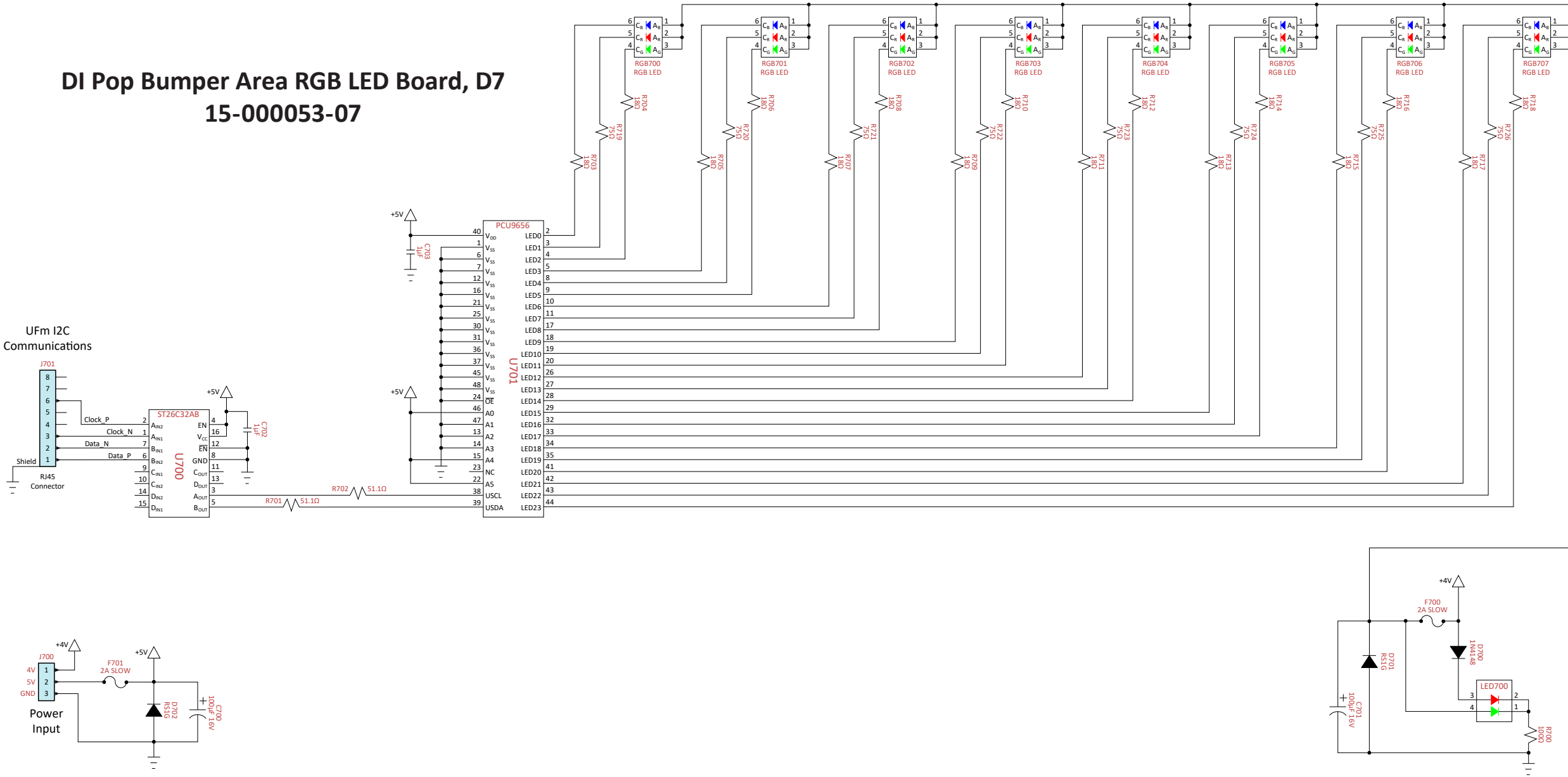


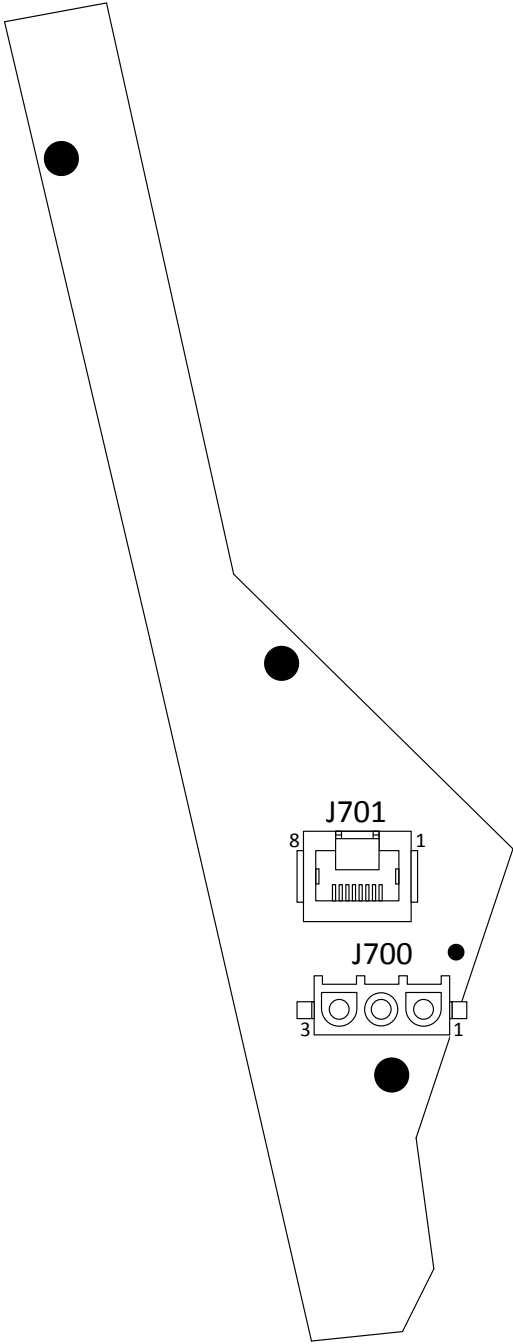


**DI Pop Bumper Area RGB LED Board, D7**  
**15-000053-07**  
*(games manufactured before Nov 1, 2017)*

Component(s)	Part Number	Description
C700, C701	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C702, C703	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D700	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D701, D702	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F700, F701	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED700	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R700	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R701, R702	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R703-R718	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R719-R726	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB700-RGB707	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U700	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U701	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J700	30-2005-03	Header, Male, 3-pin, 6.35mm
J701	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)

DI Pop Bumper Area RGB LED Board, D7  
15-000053-07





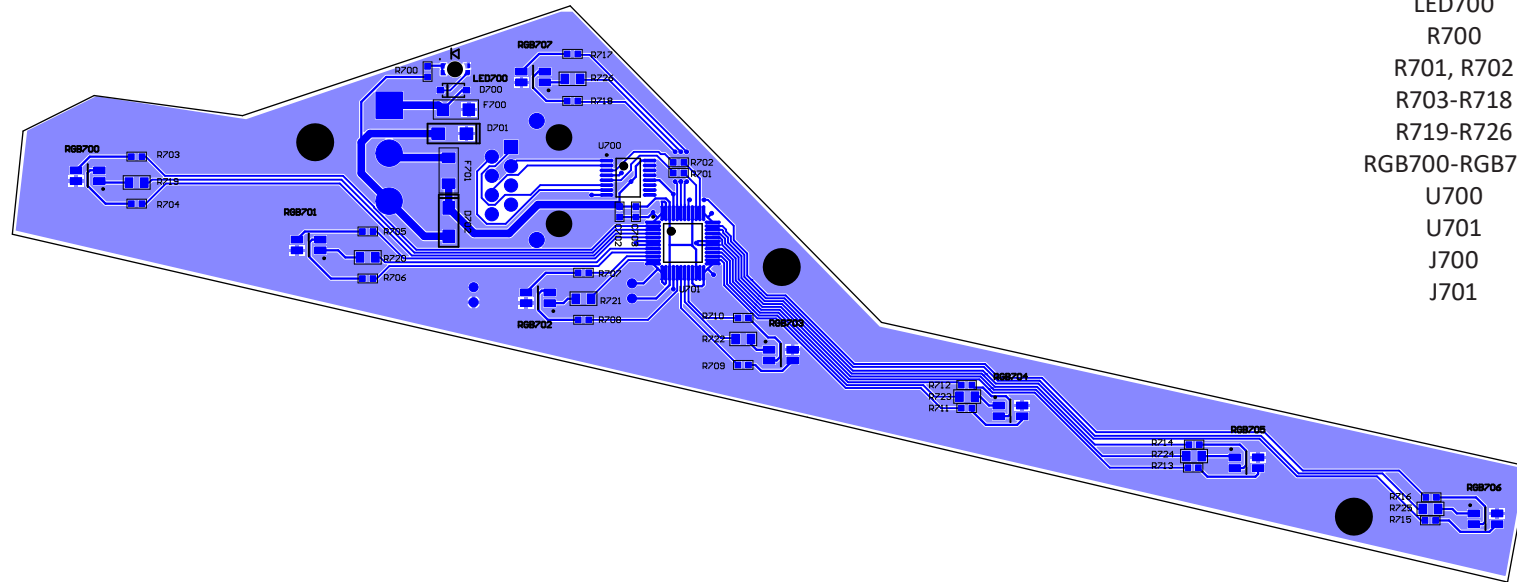
**DI Pop Bumper Area RGB LED Board, D7**  
**15-000053-07**  
**Connector Pin-outs**

**J700 Power Input**

J700-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J700-2	RED	+5VDC from Primary ATX Pwr Supply
J700-3	BLK	Ground from 7.5/4VDC Pwr Supply

**J701 UFM I2C Communications**

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J107

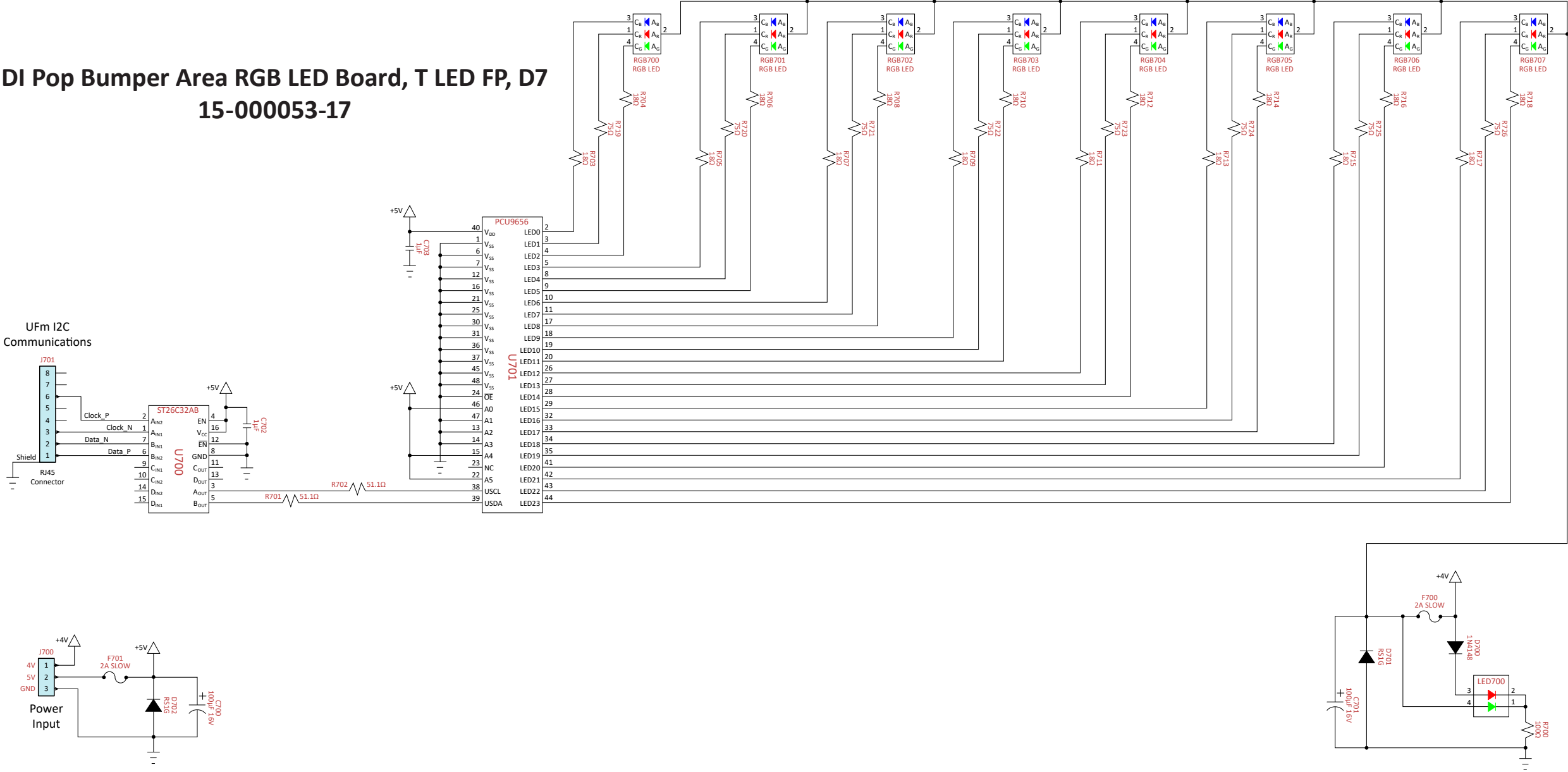


*(games manufactured on/after Nov 1, 2017)*

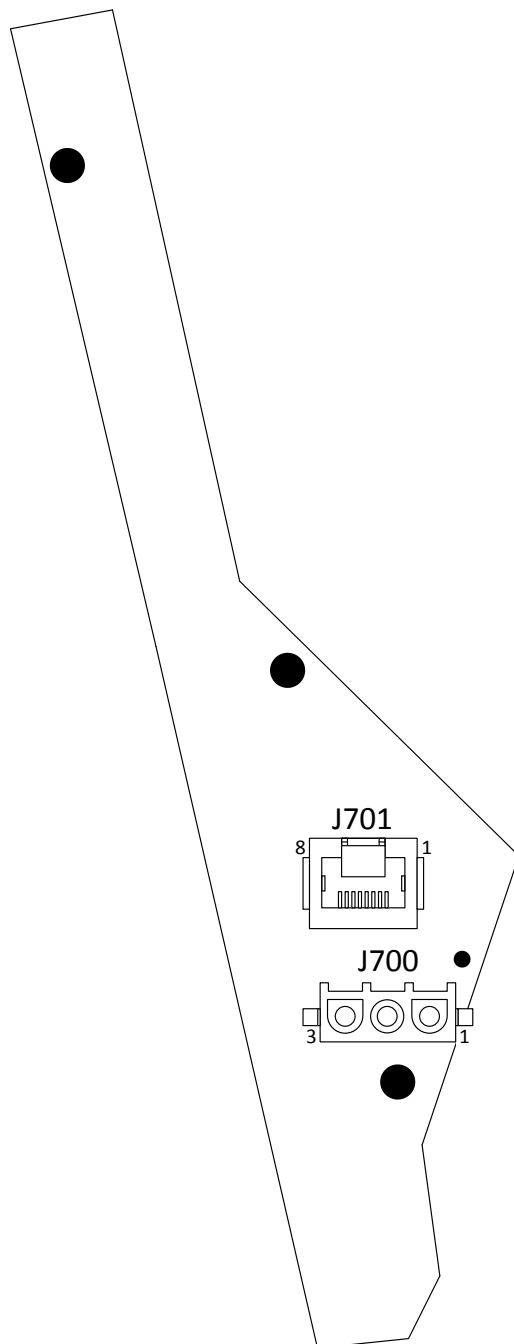
Component(s)	Part Number	Description
C700, C701	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C702, C703	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D700	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D701, D702	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F700, F701	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED700	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R700	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R701, R702	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R703-R718	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R719-R726	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB700-RGB707	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U700	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U701	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J700	30-2005-03	Header, Male, 3-pin, 6.35mm
J701	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)

# DI Pop Bumper Area RGB LED Board, T LED FP, D7

## 15-000053-17







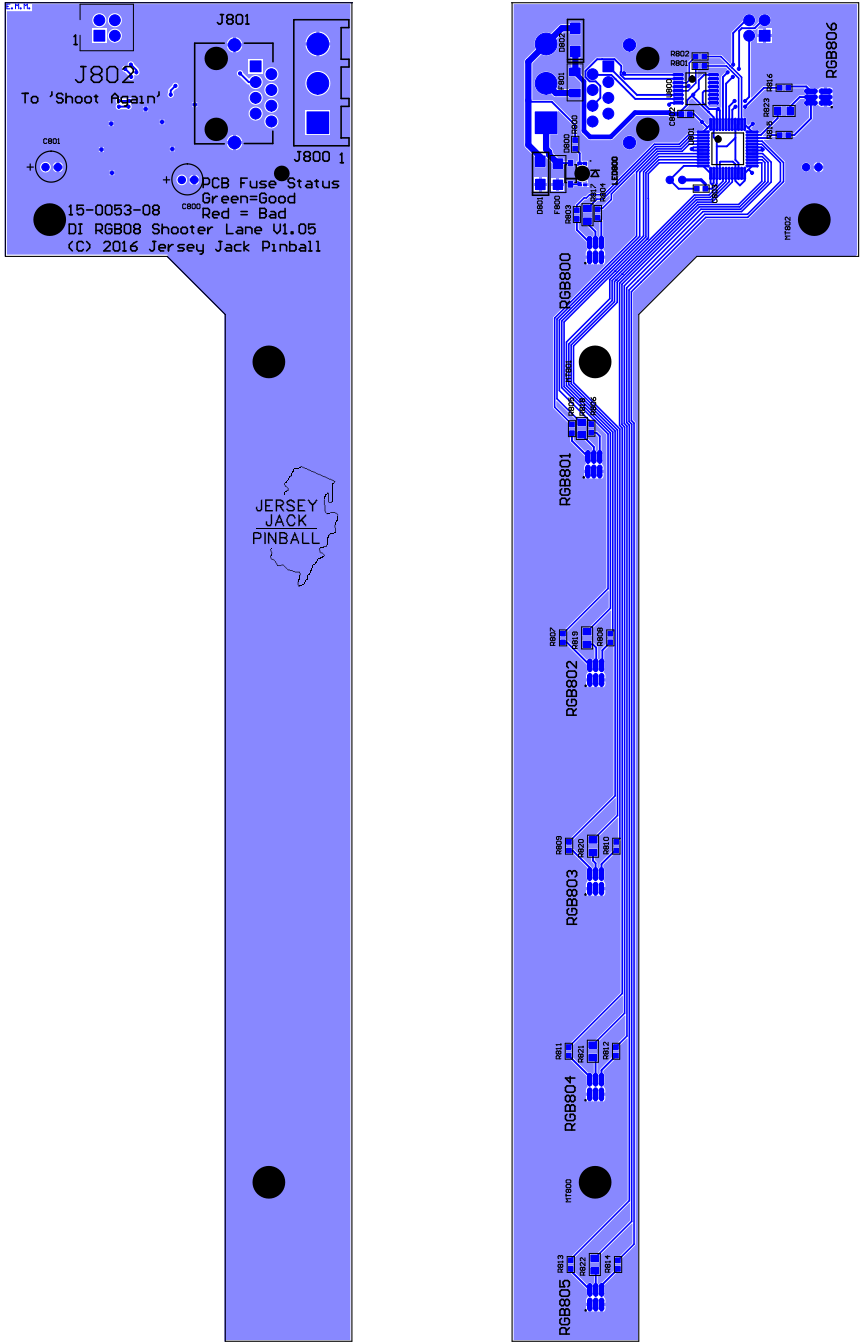
## DI Pop Bumper Area RGB LED Board, T LED FP, D7 15-000053-17 Connector Pin-outs

### ***J700 Power Input***

J700-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J700-2	RED	+5VDC from Primary ATX Pwr Supply
J700-3	BLK	Ground from 7.5/4VDC Pwr Supply

### ***J701 UFM I2C Communications***

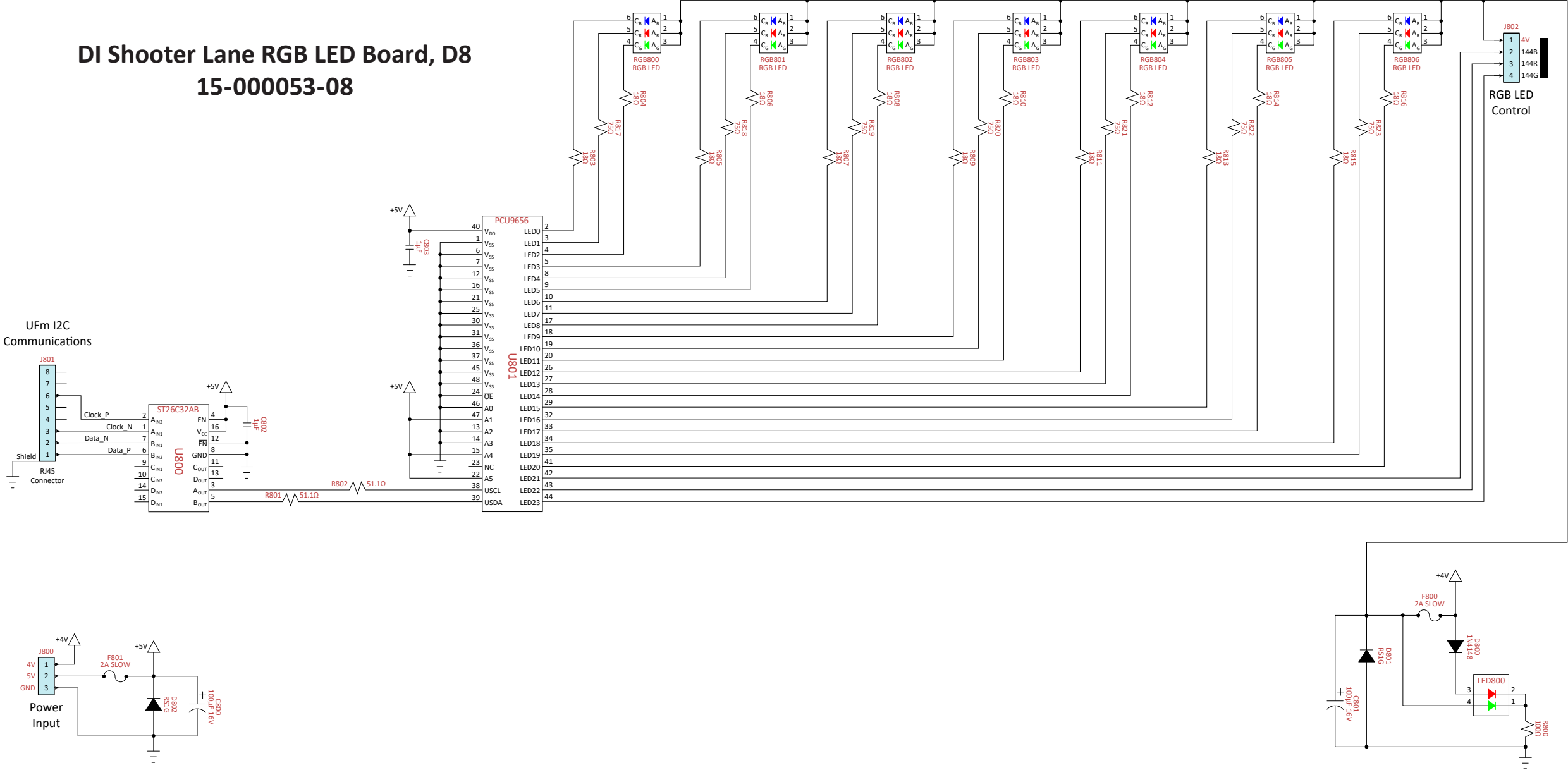
CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J107



**DI Shooter Lane RGB LED Board, D8**  
**15-000053-08**  
*(games manufactured before Nov 1, 2017)*

Component(s)	Part Number	Description
C800, C801	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C802, C803	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D800	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D801, D802	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F800, F801	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED800	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R800	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R801, R802	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R803-R816	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R817-R823	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB800-RGB806	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
U800	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U801	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J800	30-2005-03	Header, Male, 3-pin, 6.35mm
J801	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J802	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm

DI Shooter Lane RGB LED Board, D8  
15-000053-08





DI Shooter Lane RGB LED Board, D8  
15-000053-08  
Connector Pin-outs

J800 Power Input

J800-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J800-2	RED	+5VDC from Primary ATX Pwr Supply
J800-3	BLK	Ground from 7.5/4VDC Pwr Supply

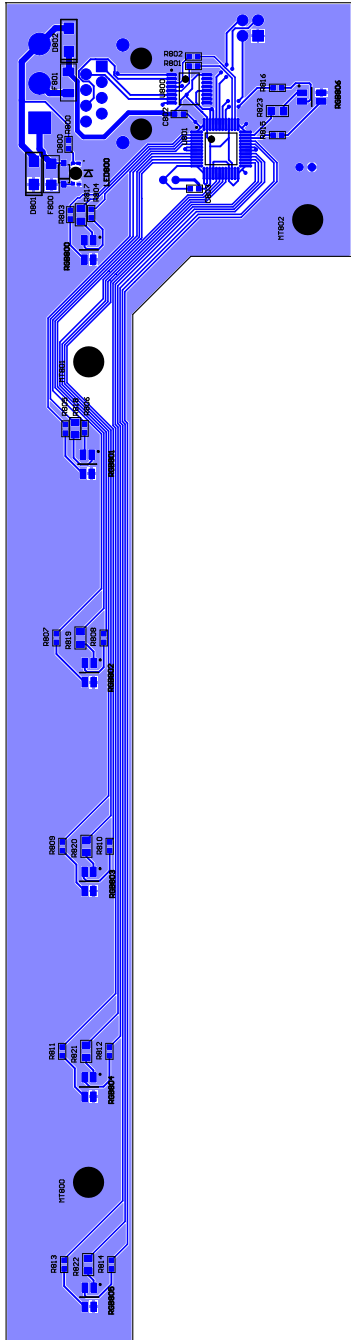
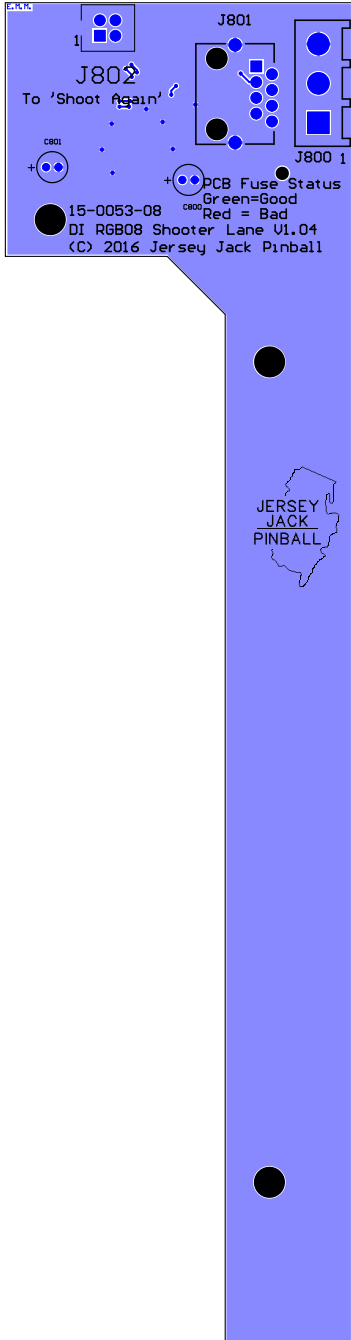
J801 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J108

J802 RGB LED Control (RGB Cable 19-00009030-03)

RGB LED 144 [Shoot Again]

J602-1	BLK	+4VDC to Single RGB LED Bd 144, J100-1
J602-2	BLK-BLU	RGB100 BLU return from Single RGB LED Bd 144, J100-4
J602-3	BLK-RED	RGB100 RED return from Single RGB LED Bd 144, J100-3
J402-4	BLK-GRN	RGB100 GRN return from Single RGB LED Bd 144, J100-2



# DI Shooter Lane RGB LED Board, T LED FP, D8

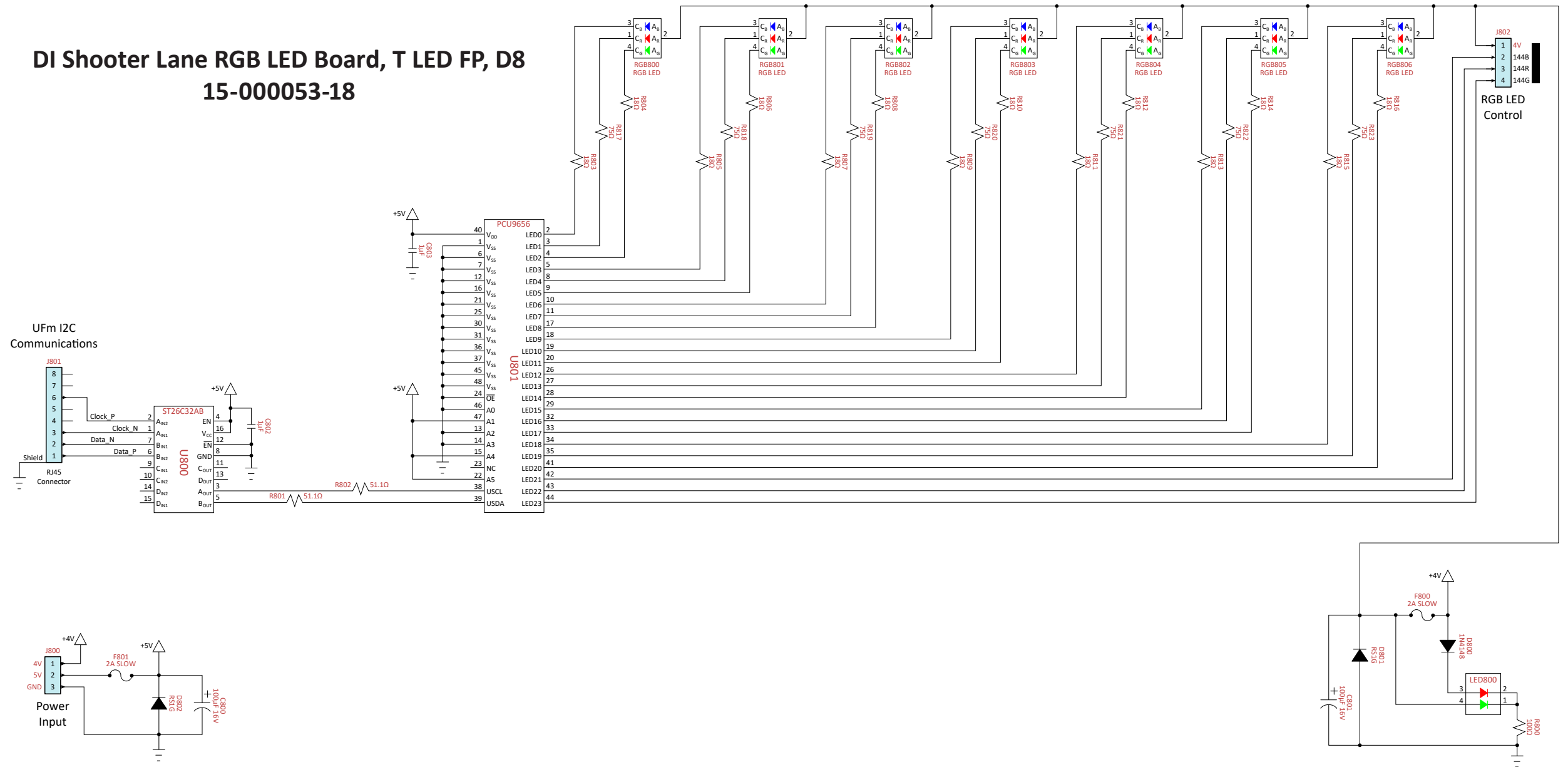
## 15-000053-18

*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
C800, C801	109-100M-016	Capacitor, Elect (Radial), 100μF, 16V, 20%
C802, C803	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
D800	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
D801, D802	110-5001-0S	Diode, RS1G, SMT, 400V, 1A, 150ns
F800, F801	170-6302-SS	Fuse, Slow, 1206 SMT, 2A, 63V
LED800	24-0024-0S	LED, SMD, Rev Mount, RED/GRN, 631/573nm
R800	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R801, R802	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R803-R816	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R817-R823	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB800-RGB806	24-0027-0S	LED, SMT, RGB, 622/523/470nm
U800	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
U801	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
J800	30-2005-03	Header, Male, 3-pin, 6.35mm
J801	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
J802	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm



**DI Shooter Lane RGB LED Board, T LED FP, D8  
15-000053-18**





DI Shooter Lane RGB LED Board, T LED FP, D8  
15-000053-18  
Connector Pin-outs

J800 Power Input

J800-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J800-2	RED	+5VDC from Primary ATX Pwr Supply
J800-3	BLK	Ground from 7.5/4VDC Pwr Supply

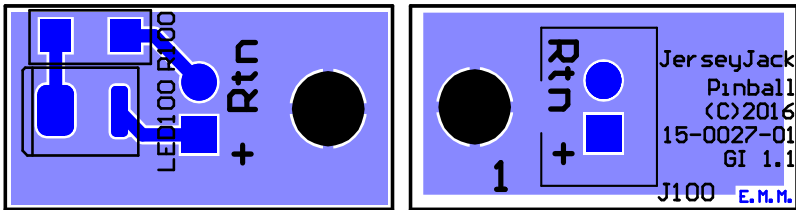
J801 UFM I2C Communications

CAT5 or higher Ethernet cable from DI Flipper Area RGB LED Bd, J108

J802 RGB LED Control (RGB Cable 19-00009030-03)

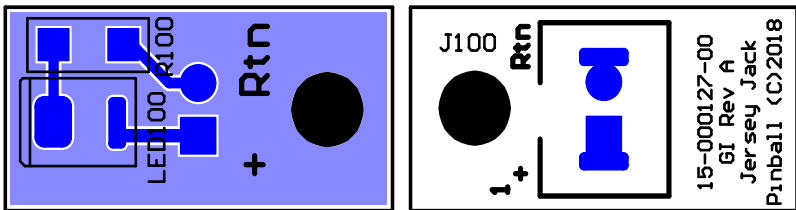
RGB LED 144 [Shoot Again]

J602-1	BLK	+4VDC to Single RGB LED Bd 144, J100-1
J602-2	BLK-BLU	RGB100 BLU return from Single RGB LED Bd 144, J100-4
J602-3	BLK-RED	RGB100 RED return from Single RGB LED Bd 144, J100-3
J402-4	BLK-GRN	RGB100 GRN return from Single RGB LED Bd 144, J100-2



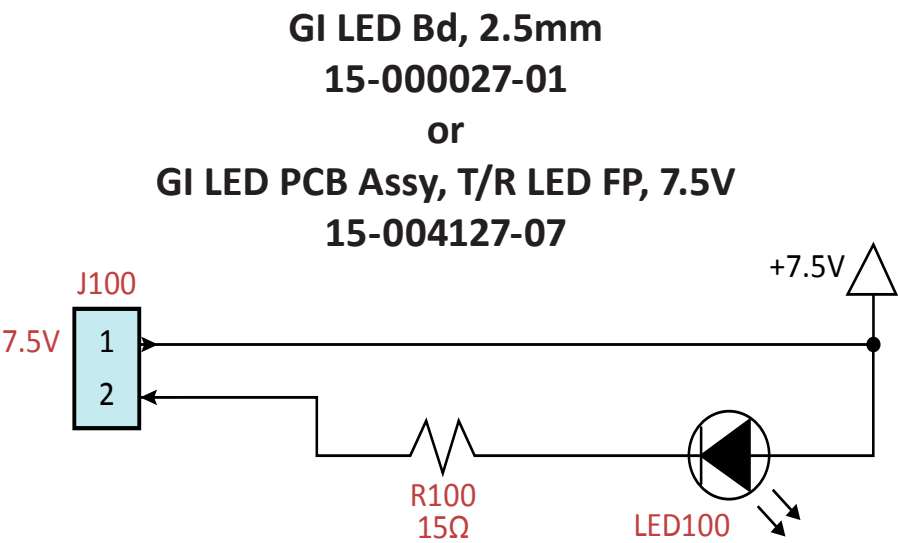
**GI LED Bd, 2.5mm**  
**15-000027-01**  
*(games manufactured before Nov 1, 2017)*

Component(s)	Part Number	Description
R100	124-0015-254	Resistor, 1206 SMT, 15Ω, 0.25W, 5%
LED100	24-0019-0S	LED, SMT, High-Power, Cool White, 5700K
J100	30-2202-02	Header, Male, 2-Pin, 2.5mm



**GI LED PCB Assy, T/R LED FP, 7.5V**  
**15-004127-07**  
*(games manufactured on/after Nov 1, 2017)*

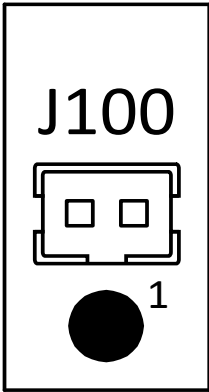
Component(s)	Part Number	Description
BARE PCB	15-000127-00	GI LED Bd, T/R LED FP
R100	124-0015-254	Resistor, 1206 SMT, 15Ω, 0.25W, 5%
LED100	24-0028-0S	LED, SMT High-Power, Cool White, 6500K
J100	30-2202-02	Header, Male, 2-Pin, 2.5mm

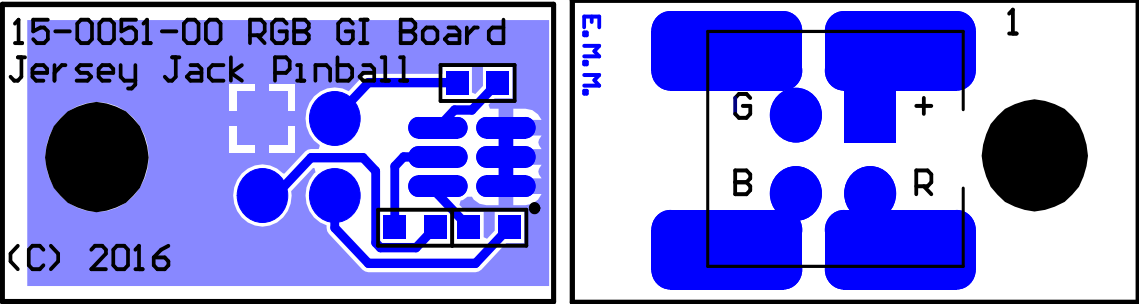


**GI LED Bd, 2.5mm**  
**15-000027-01**  
or  
**GI LED PCB Assy, T/R LED FP, 7.5V**  
**15-004127-07**  
**Connector Pin-outs**

<b>J100 LED Control/Power Input</b>		
J100-1	GRY	+7.5VDC from BAG Controller Board, an odd-numbered GI connector (J105-J113) pin
J100-2	GRY- <b>XXX</b>	LED100 return to BAG Controller Board, an even-numbered GI connector (J105-J113) pin

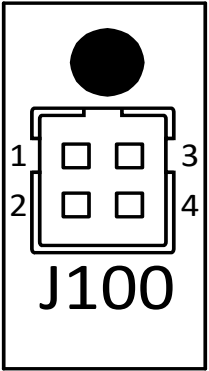
**Note:** **XXX** specifies the color of the stripe on the second wire (BLK, BRN, RED ORN, YEL, GRN, BLU or VIO).





**RGB GI Bd**  
**15-000051-00**  
*(games manufactured before Nov 1, 2017)*

Component(s)	Part Number	Description
R100, R102	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R101	122-0075-102	Resistor, 0603 SMT, 75Ω, 0.1W, 1%
RGB100	24-0016-05	LED, SMT, High-Power RGB, 624/527/470nm
J100	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm

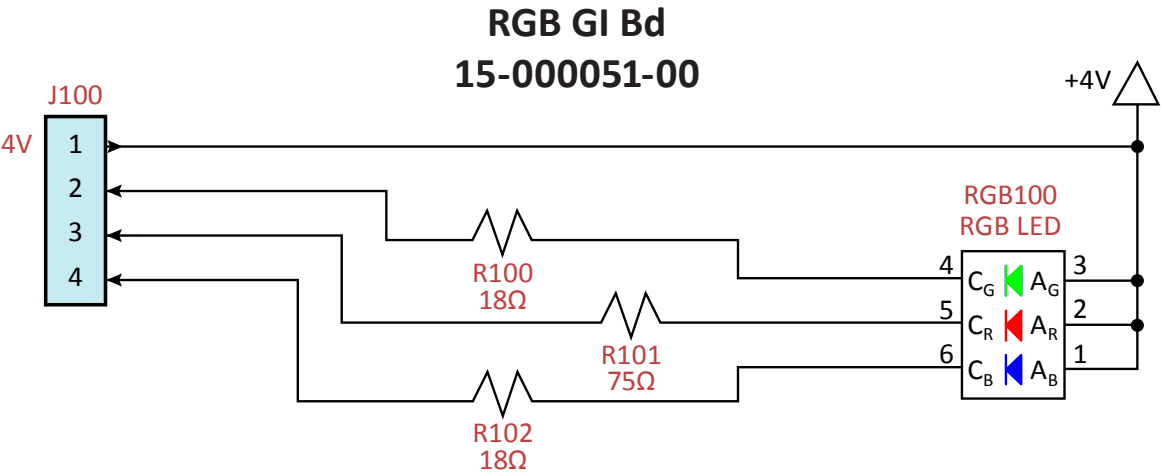


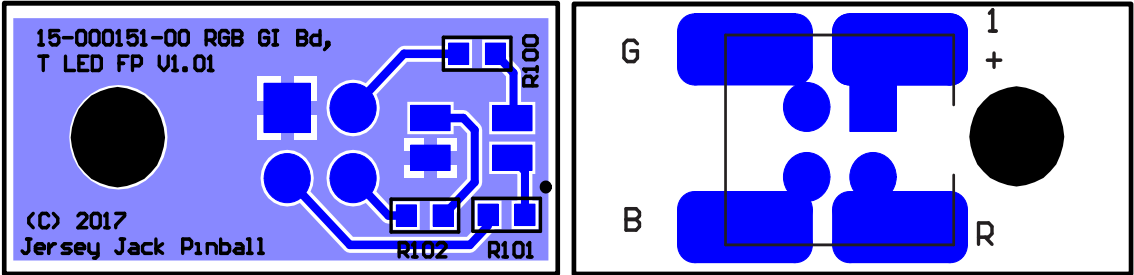
**RGB GI Bd**  
**15-000051-00**  
**Connector Pin-out**

**J100 RGB LED Control/Power Input**

J100-1	XXX	+4VDC from a main RGB LED bd (D1-D8)
J100-2	XXX-GRN	RGB100 GRN return to a main RGB LED bd (D1-D8)
J100-3	XXX-RED	RGB100 RED return to a main RGB LED bd (D1-D8)
J100-4	XXX-BLU	RGB100 BLU return to a main RGB LED bd (D1-D8)

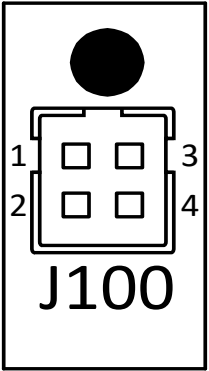
**Note:** XXX specifies the base color of the wires in the connector (BLK, BRN, RED, ORN, YEL, GRN, BLU or VIO). If the base color matches the stripe (GRN, RED or BLU), a GRY stripe is used for that wire.





**RGB GI PCB Assy, T LED FP, 4V**  
**15-004151-04**  
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
BARE PCB	15-000151-00	RGB GI Board, T LED FP
R100, R102	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R101	122-0075-102	Resistor, 0603 SMT, 75Ω, 0.1W, 1%
RGB100	24-0027-0S	LED, SMT, RGB, 622/523/470nm
J100	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm

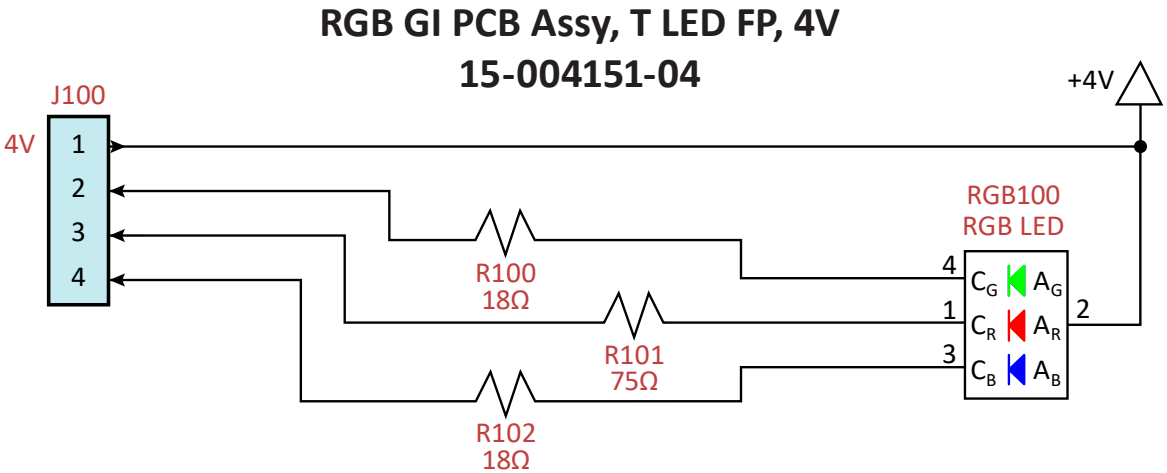


**RGB GI PCB Assy, T LED FP, 4V**  
**15-004151-04**  
**Connector Pin-out**

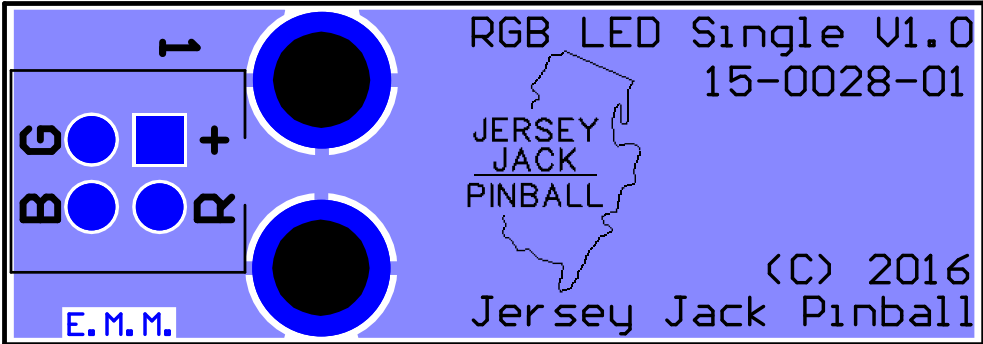
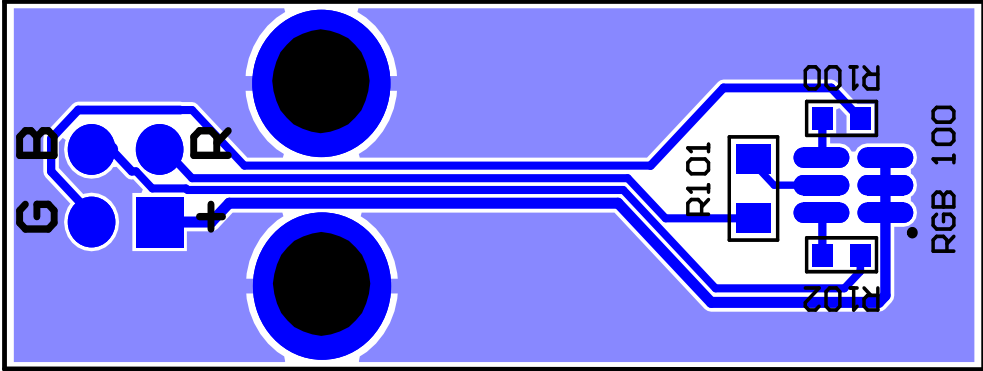
**J100 RGB LED Control/Power Input**

J100-1	XXX	+4VDC from a main RGB LED bd (D1-D8)
J100-2	XXX-GRN	RGB100 GRN return to a main RGB LED bd (D1-D8)
J100-3	XXX-RED	RGB100 RED return to a main RGB LED bd (D1-D8)
J100-4	XXX-BLU	RGB100 BLU return to a main RGB LED bd (D1-D8)

**Note:** XXX specifies the base color of the wires in the connector (BLK, BRN, RED, ORN, YEL, GRN, BLU or VIO). If the base color matches the stripe (GRN, RED or BLU), a GRY stripe is used for that wire.



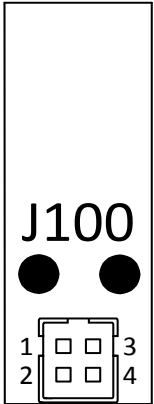
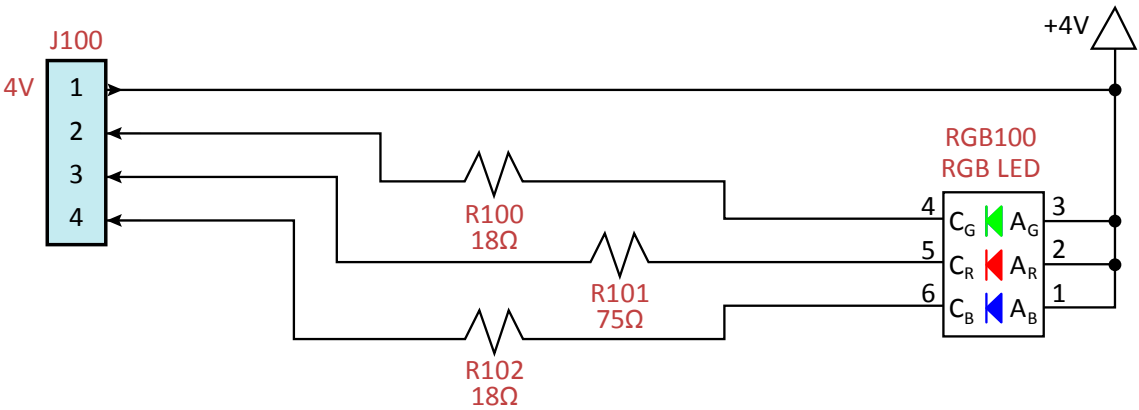




Single RGB LED Board, 2.5mm  
15-000028-01  
(games manufactured before Nov 1, 2017)

Component(s)	Part Number	Description
R100, R102	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R101	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB100	24-0016-0S	LED, SMT, High-Power RGB, 624/527/470nm
J100	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm

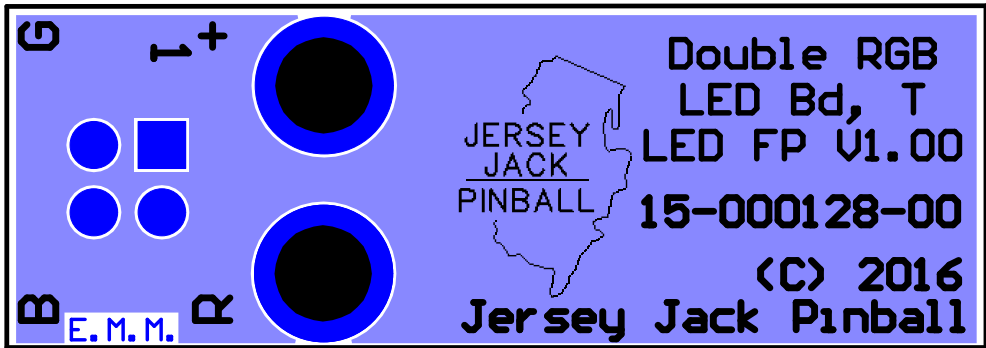
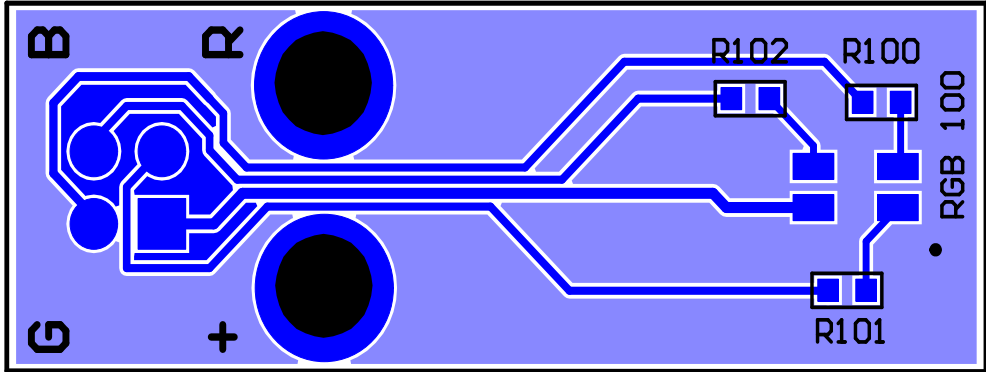
Single RGB LED Board, 2.5mm  
15-000028-01



Single RGB LED Board, 2.5mm  
15-000028-01  
Connector Pin-outs

**J100 RGB LED Control/Power Input (RGB Cable 19-009030-03)**

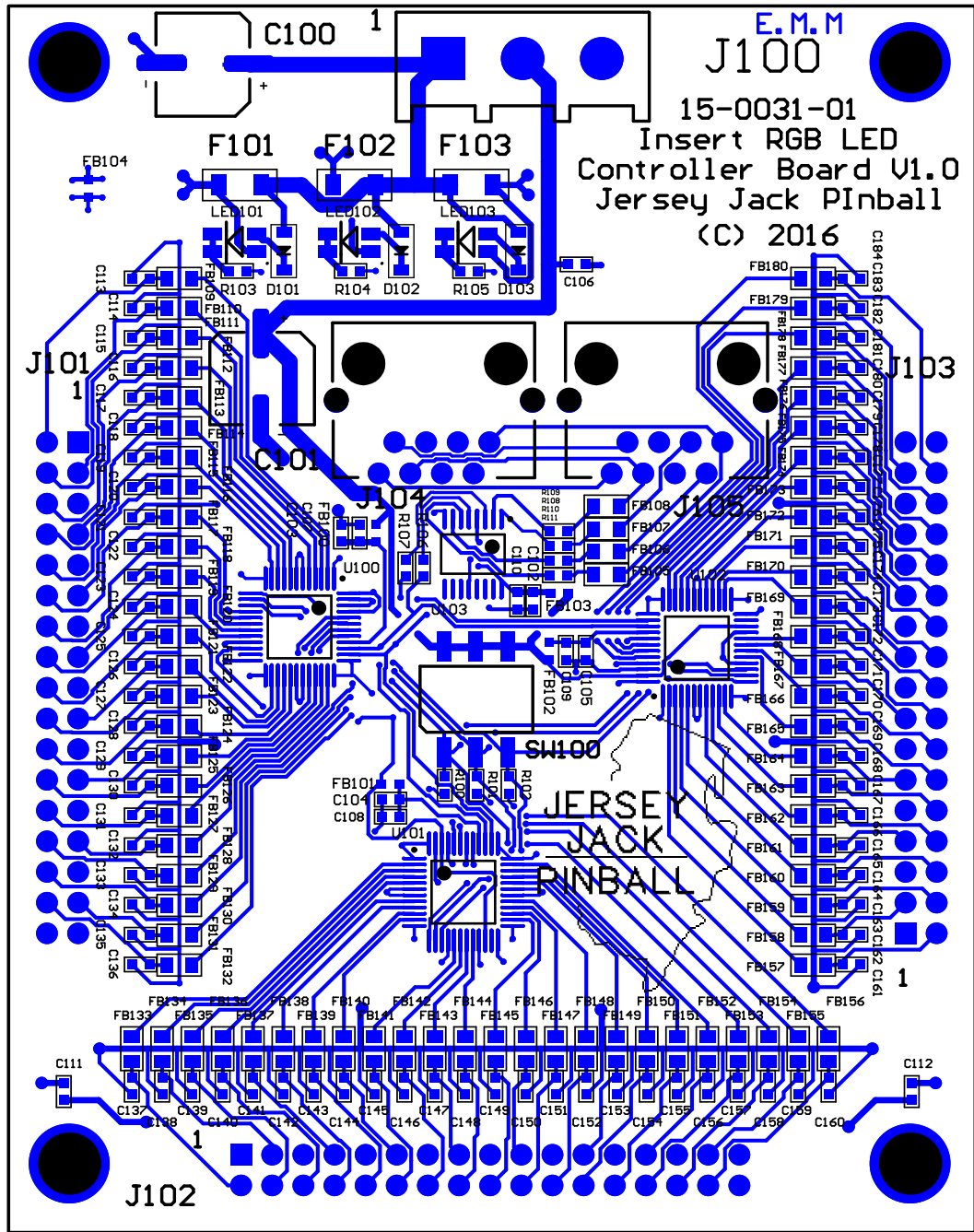
J100-1	BLK	+4VDC from the DI Shooter Lane RGB LED Bd (D8), J802
J100-2	BLK-GRN	RGB100 GRN return to the DI Shooter Lane RGB LED Bd (D8), J802
J100-3	BLK-RED	RGB100 RED return to the DI Shooter Lane RGB LED Bd (D8), J802
J100-4	BLK-BLU	RGB100 BLU return to the DI Shooter Lane RGB LED Bd (D8), J802



**Single RGB LED PCB Assy, T LED FP, 4V**  
**15-004128-04**  
*(games manufactured on/after Nov 1, 2017)*

Component(s)	Part Number	Description
BARE PCB	15-000128-00	Single RGB LED Board, T LED FP
R100, R102	122-0018-102	Resistor, 0603 SMT, 18Ω, 0.1W, 1%
R101	120-0075-122	Resistor, 0805 SMT, 75Ω, 0.125W, 1%
RGB100	24-0027-05	LED, SMT, RGB, 622/523/470nm
J100	30-2203-04	Header, Male, 4-Pin, 2 Rows, 2.5mm



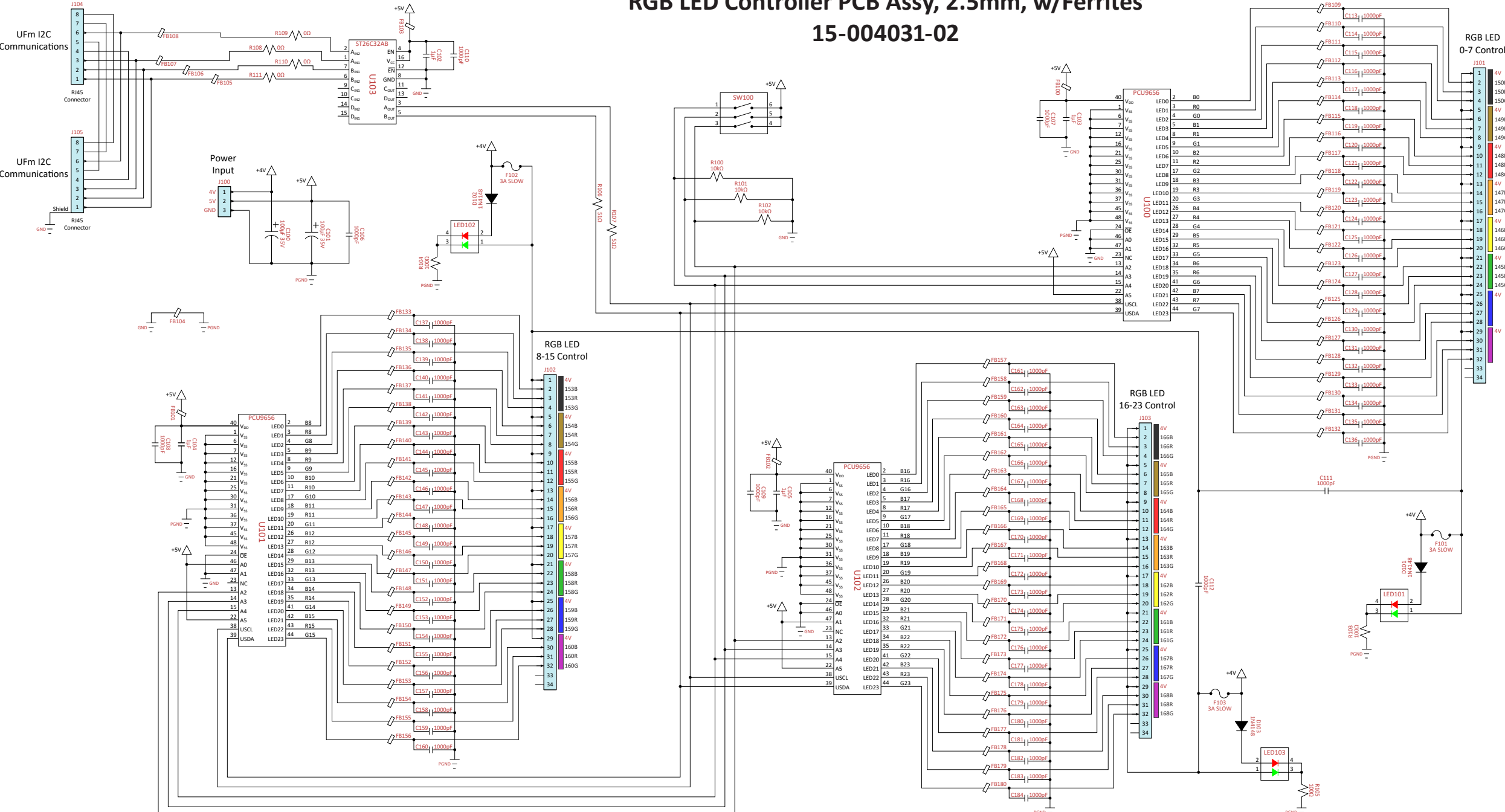


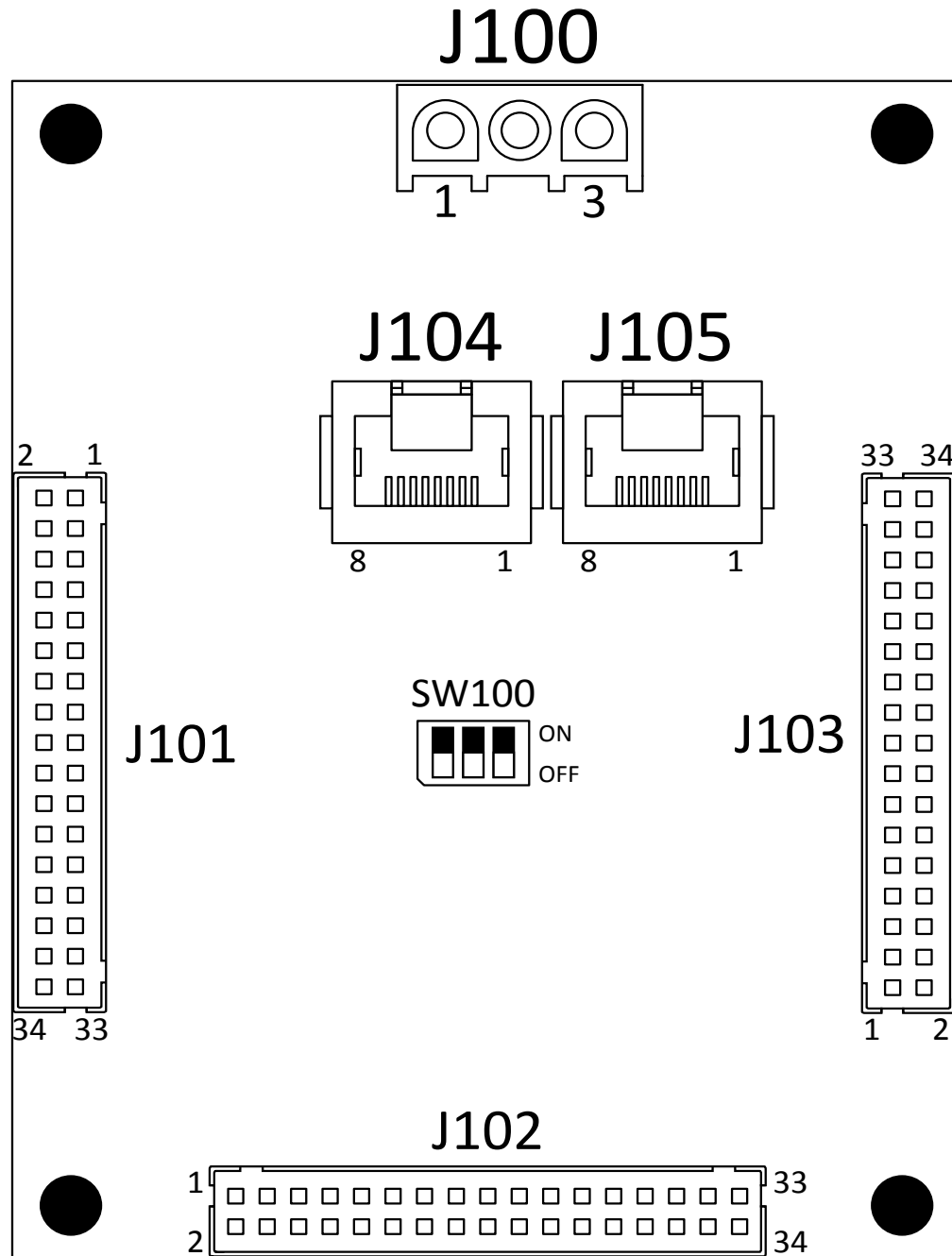
## RGB LED Controller PCB Assy, 2.5mm, w/Ferrites 15-004031-02

Component(s)	Part Number	Description
BARE PCB	15-000031-01	RGB LED Controller Board, 2.5mm
C100, C101	109-100M-035	Capacitor, Elect (Radial), 100μF, 35V, 20%
C102-C105	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%
C106-C184	103-102K-050	Capacitor, MLCC, 0603 SMT, 1000pF, 50V, 10%
D101-D103	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA
F101-F103	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V
FB100-FB104	195-5002-0S	EMI Filter Bead, 0603 SMT, 2.2kΩ at 100MHz, 150mA
FB105-FB180	195-5003-0S	EMI Filter Bead, 0805 SMT, 2.5kΩ at 100MHz, 200mA
LED101-LED103	24-0020-0S	LED, 1210 SMD, RED/GRN, 569/621nm
R100-R102	122-10K0-104	Resistor, 0603 SMT, 10kΩ, 0.1W, 5%
R103-R105	122-0100-104	Resistor, 0603 SMT, 100Ω, 0.1W, 5%
R106, R107	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%
R108-R111	122-0000-100	Resistor, 0603 SMT, 0Ω
SW100	18-8003-0S	Switch, DIP, 3-pos, 2.54mm
U100-U102	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
U103	141-0020-0S	Quad Diff Line Rcvr w/3-State Outputs, ST26C32AB, TSSOP-16 SMT
J100	30-2005-03	Header, Male, 3-pin, 6.35mm
J101-J103	30-2203-34	Header, Male, 34-Pin, 2 Rows, 2.5mm
J104, J105	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)



**15-004031-02**





## RGB LED Controller PCB Assy, 2.5mm, w/Ferrites

### 15-004031-02

#### Connector Pin-outs

#### J100 Power Input

J100-1	WHT	+4VDC from 7.5/4VDC Pwr Supply
J100-2	RED	+5VDC from Primary ATX Pwr Supply
J100-3	BLK	Ground from 7.5/4VDC Pwr Supply

#### J101 Left Ramp, Left Side RGB LED Control (RGB Cable 19-009030-50)

##### RGB LED 150 [Left Ramp #1 (left, high)]

J101-1	BLK	+4VDC to RGB GI Board 150, J100-1
J101-2	BLK-BLU	RGB100 BLU return from RGB GI Board 150, J100-4
J101-3	BLK-RED	RGB100 RED return from RGB GI Board 150, J100-3
J101-4	BLK-GRN	RGB100 GRN return from RGB GI Board 150, J100-2

##### RGB LED 149 [Left Ramp #2]

J101-5	BRN	+4VDC to RGB GI Board 149, J100-1
J101-6	BRN-BLU	RGB100 BLU return from RGB GI Board 149, J100-4
J101-7	BRN-RED	RGB100 RED return from RGB GI Board 149, J100-3
J101-8	BRN-GRN	RGB100 GRN return from RGB GI Board 149, J100-2

##### RGB LED 148 [Left Ramp #3]

J101-9	RED	+4VDC to RGB GI Board 148, J100-1
J101-10	RED-BLU	RGB100 BLU return from RGB GI Board 148, J100-4
J101-11	RED-GRY	RGB100 RED return from RGB GI Board 148, J100-3
J101-12	RED-GRN	RGB100 GRN return from RGB GI Board 148, J100-2

##### RGB LED 147 [Left Ramp #4]

J101-13	ORN	+4VDC to RGB GI Board 147, J100-1
J101-14	ORN-BLU	RGB100 BLU return from RGB GI Board 147, J100-4
J101-15	ORN-RED	RGB100 RED return from RGB GI Board 147, J100-3
J101-16	ORN-GRN	RGB100 GRN return from RGB GI Board 147, J100-2


##### RGB LED 146 [Left Ramp #5]

J101-17	YEL	+4VDC to RGB GI Board 146, J100-1
J101-18	YEL-BLU	RGB100 BLU return from RGB GI Board 146, J100-4
J101-19	YEL-RED	RGB100 RED return from RGB GI Board 146, J100-3
J101-20	YEL-GRN	RGB100 GRN return from RGB GI Board 146, J100-2


**J101 Left Ramp, Left Side RGB LED Control (RGB Cable 19-009030-50, cont.)****RGB LED 145 [Left Ramp #6 (left, low)]**

J101-21		GRN	+4VDC to RGB GI Board 145, J100-1
J101-22		GRN-BLU	RGB100 BLU return from RGB GI Board 145, J100-4
J101-23		GRN-RED	RGB100 RED return from RGB GI Board 145, J100-3
J101-24		GRN-GRY	RGB100 GRN return from RGB GI Board 145, J100-2
J101-25		Not Used	
J101-26		Not Used	
J101-27		Not Used	
J101-28		Not Used	
J101-29		Not Used	
J101-30		Not Used	
J101-31		Not Used	
J101-32		Not Used	
J101-33		Not Used	
J101-34		Not Used	


**J102 Upper Left Ramp/PF Sign/Left PB RGB LED Control (RGB Cable 19-009030-51)****RGB LED 153 [Crazy Mode (PF sign)]**

J102-1		BLK	+4VDC to RGB GI Board 153, J100-1 , thru 4-pin inline connector
J102-2		BLK-BLU	RGB100 BLU return from RGB GI Board 153, J100-4 , thru 4-pin inline connector
J102-3		BLK-RED	RGB100 RED return from RGB GI Board 153, J100-3 , thru 4-pin inline connector
J102-4		BLK-GRN	RGB100 GRN return from RGB GI Board 153, J100-2 , thru 4-pin inline connector


**RGB LED 154 [Left Pop Bumper]**

J102-5		BRN	+4VDC to Pop Bumper RGB Board 154, J100-1, thru 4-pin inline connector
J102-6		BRN-BLU	RGB100 BLU return from Pop Bumper RGB Board 154, J100-4, thru 4-pin inline connector
J102-7		BRN-RED	RGB100 RED return from Pop Bumper RGB Board 154, J100-3 , thru 4-pin inline connector
J102-8		BRN-GRN	RGB100 GRN return from Pop Bumper RGB Board 154, J100-2 , thru 4-pin inline connector


**RGB LED 155 [Upper Left Ramp #6 (low)]**

J102-9		RED	+4VDC to RGB GI Board 155, J100-1
J102-10		RED-BLU	RGB100 BLU return from RGB GI Board 155, J100-4
J102-11		RED-GRY	RGB100 RED return from RGB GI Board 155, J100-3
J102-12		RED-GRN	RGB100 GRN return from RGB GI Board 155, J100-2


**RGB LED 156 [Upper Left Ramp #5]**

J102-13		ORN	+4VDC to RGB GI Board 156, J100-1
J102-14		ORN-BLU	RGB100 BLU return from RGB GI Board 156, J100-4
J102-15		ORN-RED	RGB100 RED return from RGB GI Board 156, J100-3
J102-16		ORN-GRN	RGB100 GRN return from RGB GI Board 156, J100-2


**RGB LED 157 [Upper Left Ramp #4]**

J102-17		YEL	+4VDC to RGB GI Board 157, J100-1
J102-18		YEL-GRN	RGB100 BLU return from RGB GI Board 157, J100-4
J102-19		YEL-RED	RGB100 RED return from RGB GI Board 157, J100-3
J102-20		YEL-BLU	RGB100 GRN return from RGB GI Board 157, J100-2


**RGB LED 158 [Upper Left Ramp #3]**

J102-21		GRN	+4VDC to RGB GI Board 158, J100-1
J102-22		GRN-BLU	RGB100 BLU return from RGB GI Board 158, J100-4
J102-23		GRN-RED	RGB100 RED return from RGB GI Board 158, J100-3
J102-24		GRN-GRY	RGB100 GRN return from RGB GI Board 158, J100-2

**RGB LED 159 [Upper Left Ramp #2]**





J102-25		BLU	+4VDC to RGB GI Board 159, J100-1
J102-26		BLU-GRY	RGB100 BLU return from RGB GI Board 159, J100-4
J102-27		BLU-RED	RGB100 RED return from RGB GI Board 159, J100-3
J102-28		BLU-GRN	RGB100 GRN return from RGB GI Board 159, J100-2

**RGB LED 160 [Upper Left Ramp #1 (high)]**





J102-29		VIO	+4VDC to RGB GI Board 160, J100-1
J102-30		VIO-BLU	RGB100 BLU return from RGB GI Board 160, J100-4
J102-31		VIO-RED	RGB100 RED return from RGB GI Board 160, J100-3
J102-32		VIO-GRN	RGB100 GRN return from RGB GI Board 160, J100-2
J102-33		Not Used	
J102-34		Not Used	

### **J103 Left Ramp, Right Side/PF Sign RGB LED Control (RGB Cable 19-009030-52)**





#### **RGB LED 166 [Left Ramp #7 (right, high)]**

J103-1		BLK	+4VDC to RGB GI Board 166, J100-1
J103-2		BLK-BLU	RGB100 BLU return from RGB GI Board 166, J100-4
J103-3		BLK-RED	RGB100 RED return from RGB GI Board 166, J100-3
J103-4		BLK-GRN	RGB100 GRN return from RGB GI Board 166, J100-2





#### **RGB LED 165 [Left Ramp #8]**

J103-5		BRN	+4VDC to RGB GI Board 165, J100-1
J103-6		BRN-BLU	RGB100 BLU return from RGB GI Board 165, J100-4
J103-7		BRN-RED	RGB100 RED return from RGB GI Board 165, J100-3
J103-8		BRN-GRN	RGB100 GRN return from RGB GI Board 165, J100-2





#### **RGB LED 164 [Left Ramp #9]**

J103-9		RED	+4VDC to RGB GI Board 164, J100-1
J103-10		RED-BLU	RGB100 BLU return from RGB GI Board 164, J100-4
J103-11		RED-GRY	RGB100 RED return from RGB GI Board 164, J100-3
J103-12		RED-GRN	RGB100 GRN return from RGB GI Board 164, J100-2





#### **RGB LED 163 [Left Ramp #10]**

J103-13		ORN	+4VDC to RGB GI Board 163, J100-1
J103-14		ORN-BLU	RGB100 BLU return from RGB GI Board 163, J100-4
J103-15		ORN-RED	RGB100 RED return from RGB GI Board 163, J100-3
J103-16		ORN-GRN	RGB100 GRN return from RGB GI Board 163, J100-2





#### **RGB LED 162 [Left Ramp #11]**

J103-17		YEL	+4VDC to RGB GI Board 162, J100-1
J103-18		YEL-BLU	RGB100 BLU return from RGB GI Board 162, J100-4
J103-19		YEL-RED	RGB100 RED return from RGB GI Board 162, J100-3
J103-20		YEL-GRN	RGB100 GRN return from RGB GI Board 162, J100-2





#### **RGB LED 161 [Left Ramp #12 (right, low)]**

J103-21		GRN	+4VDC to RGB GI Board 161, J100-1
J103-22		GRN-BLU	RGB100 BLU return from RGB GI Board 161, J100-4
J103-23		GRN-RED	RGB100 RED return from RGB GI Board 161, J100-3
J103-24		GRN-GRY	RGB100 GRN return from RGB GI Board 161, J100-2

#### **RGB LED 167 [Extra Ball (PF sign)]**

J103-25		BLU	+4VDC to RGB GI Board 167, J100-1, thru 8-pin inline connector
J103-26		BLU-GRY	RGB100 BLU return from RGB GI Board 167, J100-4, thru 8-pin inline connector
J103-27		BLU-RED	RGB100 RED return from RGB GI Board 167, J100-3, thru 8-pin inline connector
J103-28		BLU-GRN	RGB100 GRN return from RGB GI Board 167, J100-2, thru 8-pin inline connector

#### **RGB LED 168 [Quick Multiball (PF sign)]**

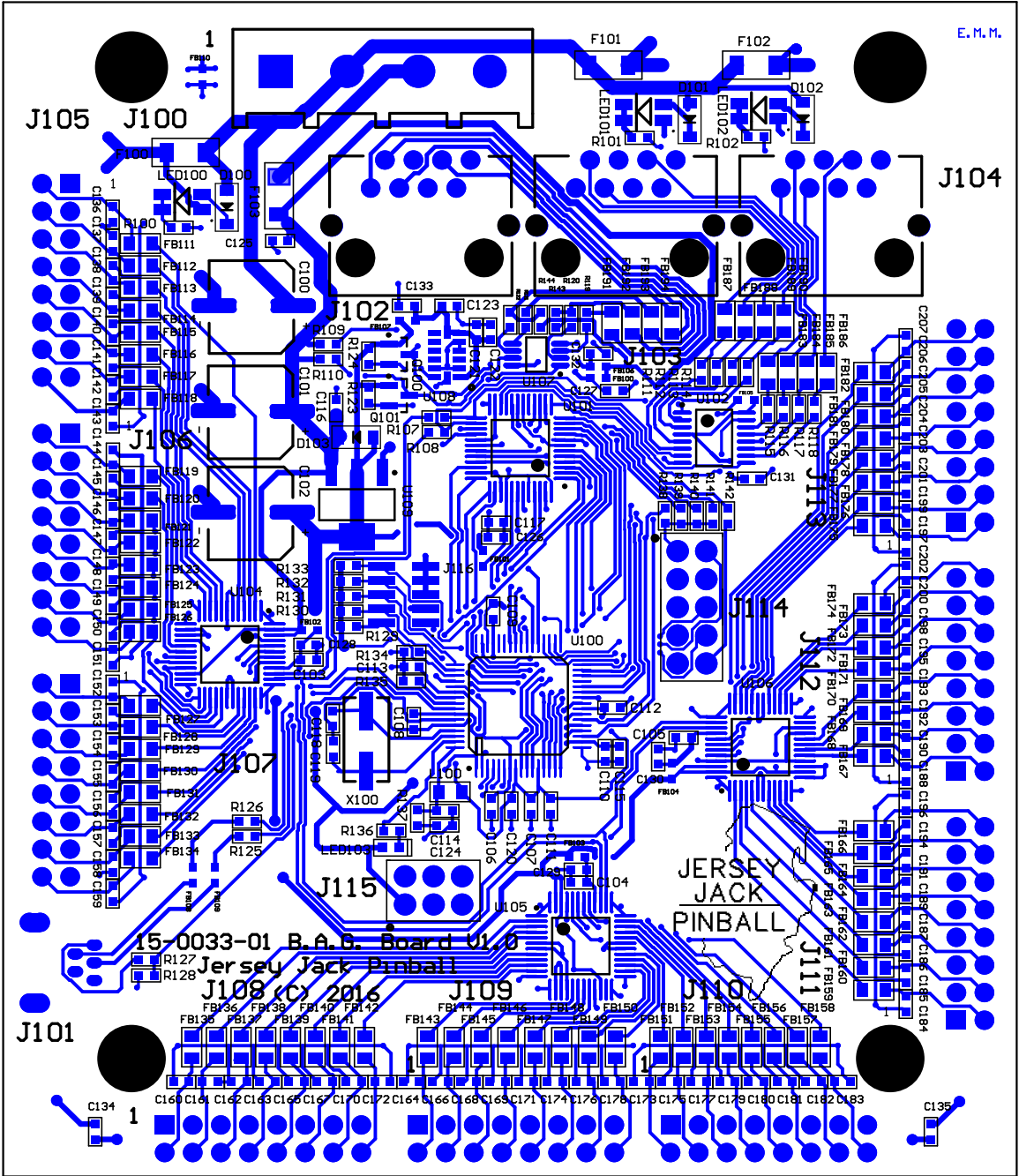
J103-29		VIO	+4VDC to RGB GI Board 168, J100-1, thru 8-pin inline connector
J103-30		VIO-BLU	RGB100 BLU return from RGB GI Board 168, J100-4, thru 8-pin inline connector
J103-31		VIO-RED	RGB100 RED return from RGB GI Board 168, J100-3, thru 8-pin inline connector
J103-32		VIO-GRN	RGB100 GRN return from RGB GI Board 168, J100-2, thru 8-pin inline connector
J103-33		Not Used	
J103-34		Not Used	

### **J104 UFM I2C Communications**

CAT5 or higher Ethernet cable from BAG Controller Bd, J103

### **J105 UFM I2C Communications**

CAT5 or higher Ethernet cable to DI Flipper Area RGB LED Bd, J101

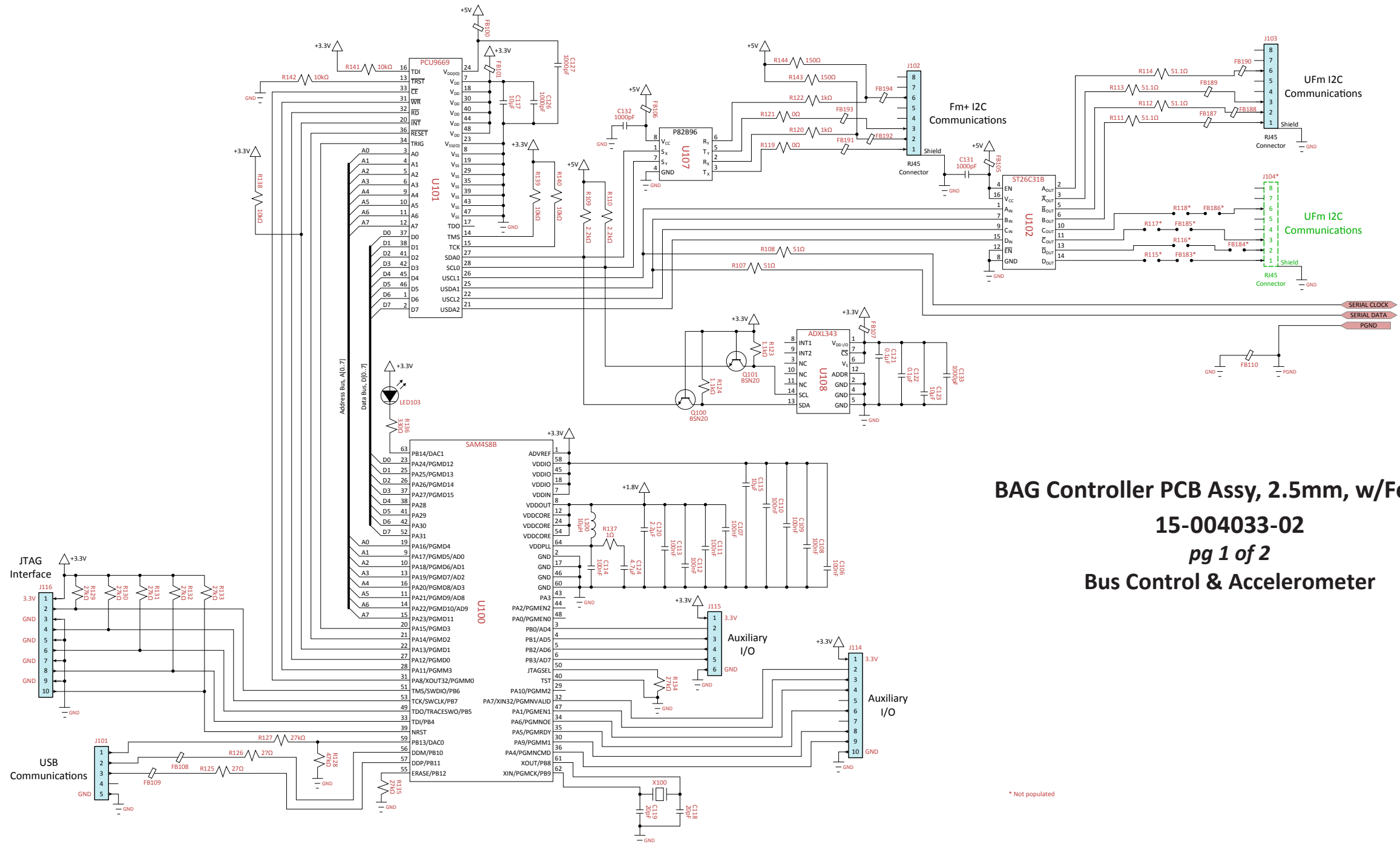




## BAG Controller PCB Assy, 2.5mm, w/Ferrites

### 15-004033-02

Component(s)	Part Number	Description	Component(s)	Part Number	Description
BARE PCB	15-000033-01	Bus, Accelerometer & GI Controller Bd, 2.5mm	R120, R122	122-001K-104	Resistor, 0603 SMT, 1kΩ, 0.1W, 5%
C100-C102	109-100M-035	Capacitor, Elect (Radial), 100μF, 35V, 20%	R123, R124	122-01K1-104	Resistor, 0603 SMT, 1.1kΩ, 0.1W, 5%
C103-C105	103-105Z-016	Capacitor, MLCC, 0603 SMT, 1μF, 16V, +80%, -20%	R125, R126	122-0027-102	Resistor, 0603 SMT, 27Ω, 0.1W, 1%
C106-C114, C121, C122	103-104K-025	Capacitor, MLCC, 0603 SMT, 0.1μF, 25V, 10%	R127, R129-R135	122-027K-104	Resistor, 0603 SMT, 27kΩ, 0.1W, 5%
C115-C117	103-106M-016	Capacitor, MLCC, 0603 SMT, 10μF, 16V, 20%	R128	122-047K-102	Resistor, 0603 SMT, 47kΩ, 0.1W, 1%
C118, C119	103-200J-050	Capacitor, MLCC, 0603 SMT, 20pF, 50V, 5%	R137	122-0001-104	Resistor, 0603 SMT, 1Ω, 0.1W, 5%
C120	103-225K-016	Capacitor, MLCC, 0603 SMT, 2.2μF, 16V, 10%	R138-R142	122-010K-104	Resistor, 0603 SMT, 10kΩ, 0.1W, 5%
C123	103-106M-006	Capacitor, MLCC, 0603 SMT, 10μF, 6.3V, 20%	R143, R144	122-0150-102	Resistor, 0603 SMT, 150Ω, 0.1W, 1%
C124	103-475K-006	Capacitor, MLCC, 0603 SMT, 4.7μF, 6.3V, 10%	R115-R118		Not Populated
C125-C207	103-102K-050	Capacitor, MLCC, 0603 SMT, 1000pF, 50V, 10%	U100	141-0021-0S	Microcontroller, 32-Bit, 120MHz, SAM4S8B, LQFP-64 SMT
D103	110-0011-0S	Diode, MBR0520L, SMT, Schottky Rectifier, 0.5A	U101	141-0022-0S	I2C-Bus Controller, UFM, 3-Ch, PCU9669B, LQFP-48 SMT
D100-D102	110-1001-0S	Diode, 1N4148, SMT, 100V, 300mA	U102	140-0006-0S	Quad Diff Line Driver w/3-State Outputs, ST26C31B, TSSOP-16 SMT
F100-F103	170-6303-SS	Fuse, Slow, 1206 SMT, 3A, 63V	U104-U106	140-0005-0S	LED Driver, I2C-Bus, 24-Bit, 5MHz, PCU9656, LQFP-48 SMT
FB100-FB110	195-5002-0S	EMI Filter Bead, 0603 SMT, 2.2kΩ at 100MHz, 150mA	U107	141-0023-0S	Dual Bidirectional I2C-Bus Buffer, P82B96, SOT-505-8 SMT
FB111-FB182,			U108	141-0024-0S	Accelerometer, 3-Axis, I2C-Bus, ADXL343, LGA-14 SMT
FB187-FB194	195-5003-0S	EMI Filter Bead, 0805 SMT, 2.5kΩ at 100MHz, 200mA	U109	142-0009-0S	Voltage Regulator, TLV1117, SOT-223-4 SMT, 3.3V, 300mA
FB183-FB186		Not Populated	X100	160-0003-0S	Crystal, 12MHz, 120-20-3X-TR, SMT, 20pF, 50PPM
L100	190-0008-0S	Inductor, SMD, 10μH, 350mA, 50MHz	J100	30-2005-04	Header, Male, 4-pin, 6.35mm
LED100-LED102	24-0020-0S	LED, 1210 SMD, RED/GRN, 569/621nm	J101	31-2507-01	Receptacle, Mini USB 2.0, Type B
LED103	24-0021-0S	LED, 0603 SMD, YEL, 571nm	J102, J103	30-2510-01	Jack Header, w/Shield, RJ45 (Ethernet)
Q100, Q101	130-0006-0S	MOSFET, BSN20-7, N-Ch, SOT-23-3, 50V, 500mA	J104		Not Populated
R100-R102, R136	122-0330-102	Resistor, 0603 SMT, 330Ω, 0.1W, 1%	J105-J113	30-2203-16	Header, Male, 16-Pin, 2 Rows, 2.5mm
R107, R108, R111-R114	122-51P1-102	Resistor, 0603 SMT, 51.1Ω, 0.1W, 1%	J114	31-2513-10	Connector Header, Male, 10-pin, 2 Rows, 2.54mm
R109, R110	122-02K2-104	Resistor, 0603 SMT, 2.2kΩ, 0.1W, 5%	J115	31-2513-06	Connector Header, Male, 6-pin, 2 Rows, 2.54mm
R119, R121	122-0000-100	Resistor, 0603 SMT, 0Ω	J116	31-2514-10	Header, Male, 10-pin, 2 Rows, 1.27mm



**BAG Controller PCB Assy, 2.5mm, w/Ferrites**  
**15-004033-02**  
*pg 1 of 2*  
**Bus Control & Accelerometer**

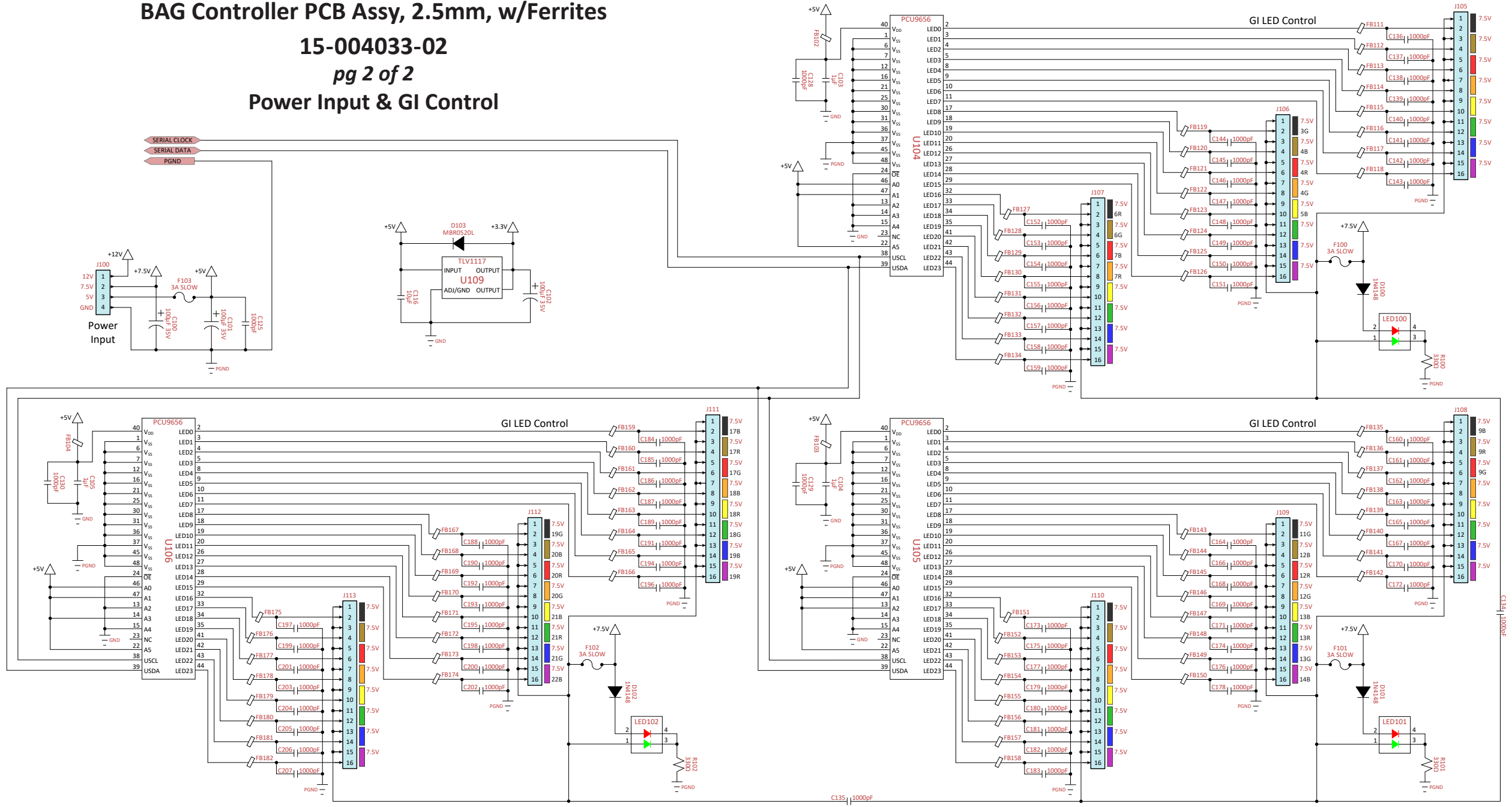
\* Not populated

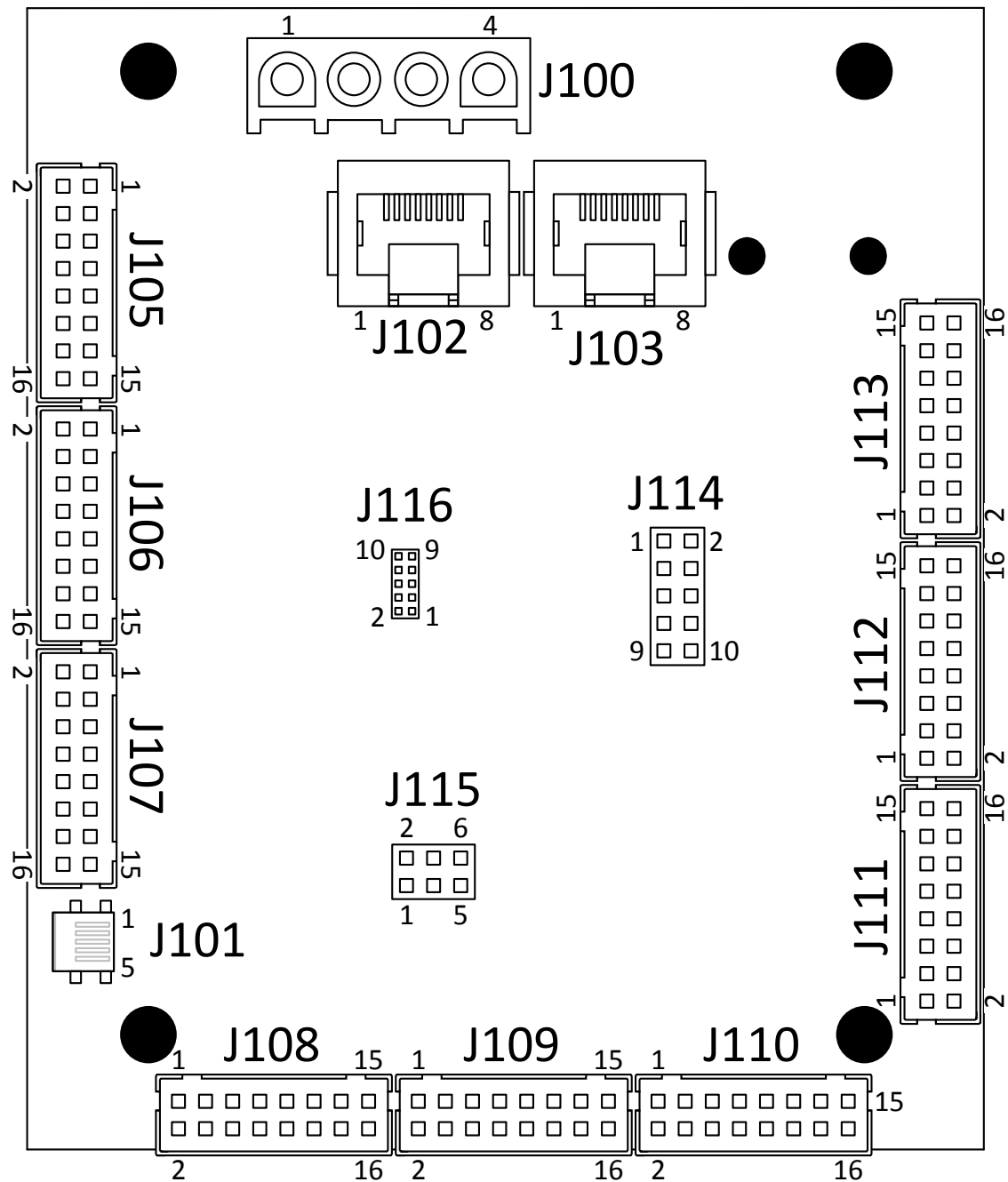
BAG Controller PCB Assy, 2.5mm, w/Ferrites

15-004033-02

pg 2 of 2

Power Input & GI Control





**BAG Controller PCB Assy, 2.5mm, w/Ferrites**  
**15-004033-02**  
**Connector Pin-outs**

**J100 DC Power Input**

J100-1	Not Used	
J100-2	VIO	+7.5VDC from 7.5/4VDC Pwr Supply
J100-3	RED	+5VDC from Primary ATX Pwr Supply
J100-4	BLK	Ground from 7.5/4VDC Pwr Supply

**J101 USB Communications**

USB Mini-B to 2.0 A cable, run from back of CPU Bd, USB port

**J102 FM+ I2C Communications**

Not Used

**J103 UFM I2C Communications**

CAT5 or higher Ethernet cable to RGB LED Controller Bd, J104











**J104 UFM I2C Communications**

Not Used (Not Populated)









**J105 GI Control**

J105-1	Not Used
J105-2	Not Used
J105-3	Not Used
J105-4	Not Used
J105-5	Not Used
J105-6	Not Used
J105-7	Not Used
J105-8	Not Used
J105-9	Not Used
J105-10	Not Used
J105-11	Not Used
J105-12	Not Used
J105-13	Not Used
J105-14	Not Used
J105-15	Not Used
J105-16	Not Used







**J106 Back Panel Flasher Control (Flasher Cable 19-003122-05)**

J106-1		GRY	+7.5V to GI Board 3G [Skyline Flasher #1 (left)], J100-1
J106-2		GRY-BLK	LED return from GI Board 3G [Skyline Flasher #1 (left)], J100-2
J106-3		GRY	+7.5V to GI Board 4B [Skyline Flasher #2], J100-1
J106-4		GRY-BRN	LED return from GI Board 4B [Skyline Flasher #2], J100-2
J106-5		GRY	+7.5V to GI Board 4R [Skyline Flasher #3], J100-1
J106-6		GRY-RED	LED return from GI Board 4R [Skyline Flasher #3], J100-2
J106-7		GRY	+7.5V to GI Board 4G [Skyline Flasher #4], J100-1
J106-8		GRY-ORN	LED return from GI Board 4G [Skyline Flasher #4], J100-2
J106-9		GRY	+7.5V to GI Board 5B [Skyline Flasher #5 (right)], J100-1
J106-10		GRY-YEL	LED return from GI Board 5B [Skyline Flasher #5 (right)], J100-2
J106-11			Not Used
J106-12			Not Used
J106-13			Not Used
J106-14			Not Used
J106-15			Not Used
J106-16			Not Used

**J107 Lower Middle GI/Flasher Control (GI/Flasher Cable 19-003122-04)**

















J107-1		GRY	+7.5V to GI Board 6R [Pop Bumper Flasher], J100-1
J107-2		GRY-BLK	LED return from GI Board 6R [Pop Bumper Flasher], J100-2
J107-3		GRY	+7.5V to GI Board 6G [Right Return #2 (lower)], J100-1
J107-4		GRY-BRN	LED return from GI Board 6G [Right Return #2 (lower)], J100-2
J107-5		GRY	+7.5V to GI Board 7B [Left Sling], J100-1
J107-6		GRY-RED	LED return from GI Board 7B [Left Sling], J100-2
J107-7		GRY	+7.5V to GI Board 7R [Left Return #2 (lower)], J100-1
J107-8		GRY-ORN	LED return from GI Board 7R [Left Return #2 (lower)], J100-2
J107-9			Not Used
J107-10			Not Used
J107-11			Not Used
J107-12			Not Used
J107-13			Not Used
J107-14			Not Used
J107-15			Not Used
J107-16			Not Used

**J108 Middle Flasher Control (Flasher Cable 19-003122-06)**

J108-1		GRY	+7.5V to GI Board 9B [Theater Flasher], J100-1
J108-2		GRY-BLK	LED return from GI Board 9B [Moving Target Flasher (left)], J100-2
J108-3		GRY	+7.5V to GI Board 9R [Moving Target Flasher (left)], J100-1, thru 4-pin inline connector
J108-4		GRY-BRN	LED return from GI Board 9R [Moving Target Flasher (left)], J100-2, thru 4-pin inline connector
J108-5		GRY	+7.5V to GI Board 9G [Moving Target Flasher (right)], J100-1, thru 4-pin inline connector
J108-6		GRY-RED	LED return from GI Board 9G [Moving Target Flasher (right)], J100-2, thru 4-pin inline connector
J108-7			Not Used
J108-8			Not Used
J108-9			Not Used
J108-10			Not Used
J108-11			Not Used
J108-12			Not Used
J108-13			Not Used
J108-14			Not Used
J108-15			Not Used
J108-16			Not Used



















**J109 Left Side GI Control (GI Cable 19-003122-03)**

J109-1		GRY	+7.5V to GI Board 11G [Left Ramps Area #4 (lower)], J100-1
J109-2		GRY-BLK	LED return from GI Board 11G [Left Ramps Area #4 (lower)], J100-2
J109-3		GRY	+7.5V to GI Board 12B [Left Side #1 (upper)], J100-1
J109-4		GRY-BRN	LED return from GI Board 12B [Left Side #1 (upper)], J100-2
J109-5		GRY	+7.5V to GI Board 12R [Left Side #2], J100-1
J109-6		GRY-RED	LED return from GI Board 12R [Left Side #2], J100-2
J109-7		GRY	+7.5V to GI Board 12G [Spider], J100-1
J109-8		GRY-ORN	LED return from GI Board 12G [Spider], J100-2
J109-9		GRY	+7.5V to GI Board 13B [Left Side #3], J100-1
J109-10		GRY-YEL	LED return from GI Board 13B [Left Side #3], J100-2
J109-11		GRY	+7.5V to GI Board 13R [Left Side #4], J100-1
J109-12		GRY-GRN	LED return from GI Board 13R [Left Side #4], J100-2
J109-13		GRY	+7.5V to GI Board 13G [Left Side #5 (lower)], J100-1
J109-14		GRY-BLU	LED return from GI Board 13G [Left Side #5 (lower)], J100-2
J109-15		VIO	+7.5V to GI Board 14B [Left Return #1 (upper)], J100-1
J109-16		GRY-VIO	LED return from GI Board 14B [Left Return #1 (upper)], J100-2

**J110 GI Control**

J110-1	Not Used
J110-2	Not Used
J110-3	Not Used
J110-4	Not Used
J110-5	Not Used
J110-6	Not Used
J110-7	Not Used
J110-8	Not Used
J110-9	Not Used
J110-10	Not Used
J110-11	Not Used
J110-12	Not Used
J110-13	Not Used
J110-14	Not Used
J110-15	Not Used
J110-16	Not Used

**J111 Upper GI Control (GI Cable 19-003122-01)**

J111-1		GRY	+7.5V to GI Board 17B [Left Ramps Area #3], J100-1
J111-2		GRY-BLK	LED return from GI Board 17B [Left Ramps Area #3], J100-2
J111-3		GRY	+7.5V to GI Board 17R [Left Ramps Area #2], J100-1
J111-4		GRY-BRN	LED return from GI Board 17R [Left Ramps Area #2], J100-2
J111-5		GRY	+7.5V to GI Board 17G [Left Ramps Area #1 (upper)], J100-1
J111-6		GRY-RED	LED return from GI Board 17G [Left Ramps Area #1 (upper)], J100-2
J111-7		GRY	+7.5V to GI Board 18B [Skyline #1 (left)], J100-1
J111-8		GRY-ORN	LED return from GI Board 18B [Skyline #1 (left)], J100-2
J111-9		GRY	+7.5V to GI Board 18R [Skyline #2], J100-1
J111-10		GRY-YEL	LED return from GI Board 18R [Skyline #2], J100-2
J111-11		GRY	+7.5V to GI Board 18G [Skyline #3], J100-1
J111-12		GRY-GRN	LED return from GI Board 18G [Skyline #3], J100-2
J111-13		GRY	+7.5V to GI Board 19B [Skyline #4], J100-1
J111-14		GRY-BLU	LED return from GI Board 19B [Skyline #4], J100-2
J111-15		VIO	+7.5V to GI Board 19R [Skyline #5], J100-1
J111-16		GRY-VIO	LED return from GI Board 19R [Skyline #5], J100-2

**J112 Right Side GI Control (GI Cable 19-003122-02)**

J112-1		GRY	+7.5V to GI Board 19G [Theater Exit], J100-1
J112-2		GRY-BLK	LED return from GI Board 19G [Theater Exit], J100-2
J112-3		GRY	+7.5V to GI Board 20B [Skyline #6 (right)], J100-1
J112-4		GRY-BRN	LED return from GI Board 20B [Skyline #6 (right)], J100-2
J112-5		GRY	+7.5V to GI Board 20R [Upper Right], J100-1
J112-6		GRY-RED	LED return from GI Board 20R [Upper Right], J100-2
J112-7		GRY	+7.5V to GI Board 20G [Pop Bumpers], J100-1
J112-8		GRY-ORN	LED return from GI Board 20G [Pop Bumpers], J100-2
J112-9		GRY	+7.5V to GI Board 21B [Upper Flipper], J100-1
J112-10		GRY-YEL	LED return from GI Board 21B [Upper Flipper], J100-2
J112-11		GRY	+7.5V to GI Board 21R [Drone], J100-1
J112-12		GRY-GRN	LED return from GI Board 21R [Drone], J100-2
J112-13		GRY	+7.5V to GI Board 21G [Right Sling], J100-1
J112-14		GRY-BLU	LED return from GI Board 21G [Right Sling], J100-2
J112-15		GRY	+7.5V to GI Board 22B [Right Return #1 (upper)], J100-1
J112-16		GRY-VIO	LED return from GI Board 22B [Right Return #1 (upper)], J100-2

**J113 GI Control**

J113-1	Not Used
J113-2	Not Used
J113-3	Not Used
J113-4	Not Used
J113-5	Not Used
J113-6	Not Used
J113-7	Not Used
J113-8	Not Used
J113-9	Not Used
J113-10	Not Used
J113-11	Not Used
J113-12	Not Used
J113-13	Not Used
J113-14	Not Used
J113-15	Not Used
J113-16	Not Used

**J114 Auxiliary I/O**

J114-1	Not Used
J114-2	Not Used
J114-3	Not Used
J114-4	Not Used
J114-5	Not Used
J114-6	Not Used
J114-7	Not Used
J114-8	Not Used
J114-9	Not Used
J114-10	Not Used

**J115 Auxiliary I/O**

J115-1	Not Used
J115-2	Not Used
J115-3	Not Used
J115-4	Not Used
J115-5	Not Used
J115-6	Not Used

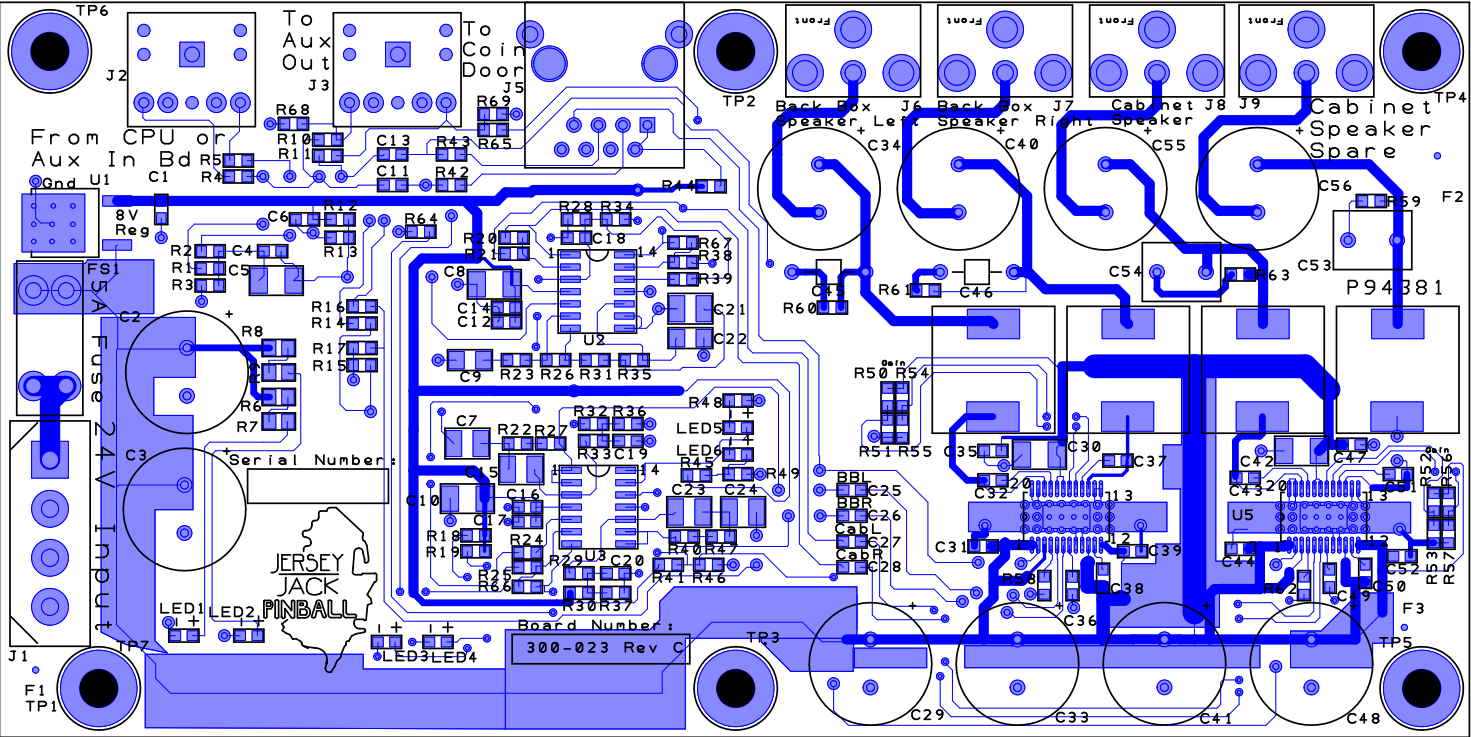
**J116 JTAG Interface**

J116-1	Not Used
J116-2	Not Used
J116-3	Not Used
J116-4	Not Used
J116-5	Not Used
J116-6	Not Used
J116-7	Not Used
J116-8	Not Used
J116-9	Not Used
J116-10	Not Used

Sound Amplifier Board, 15-000002-00

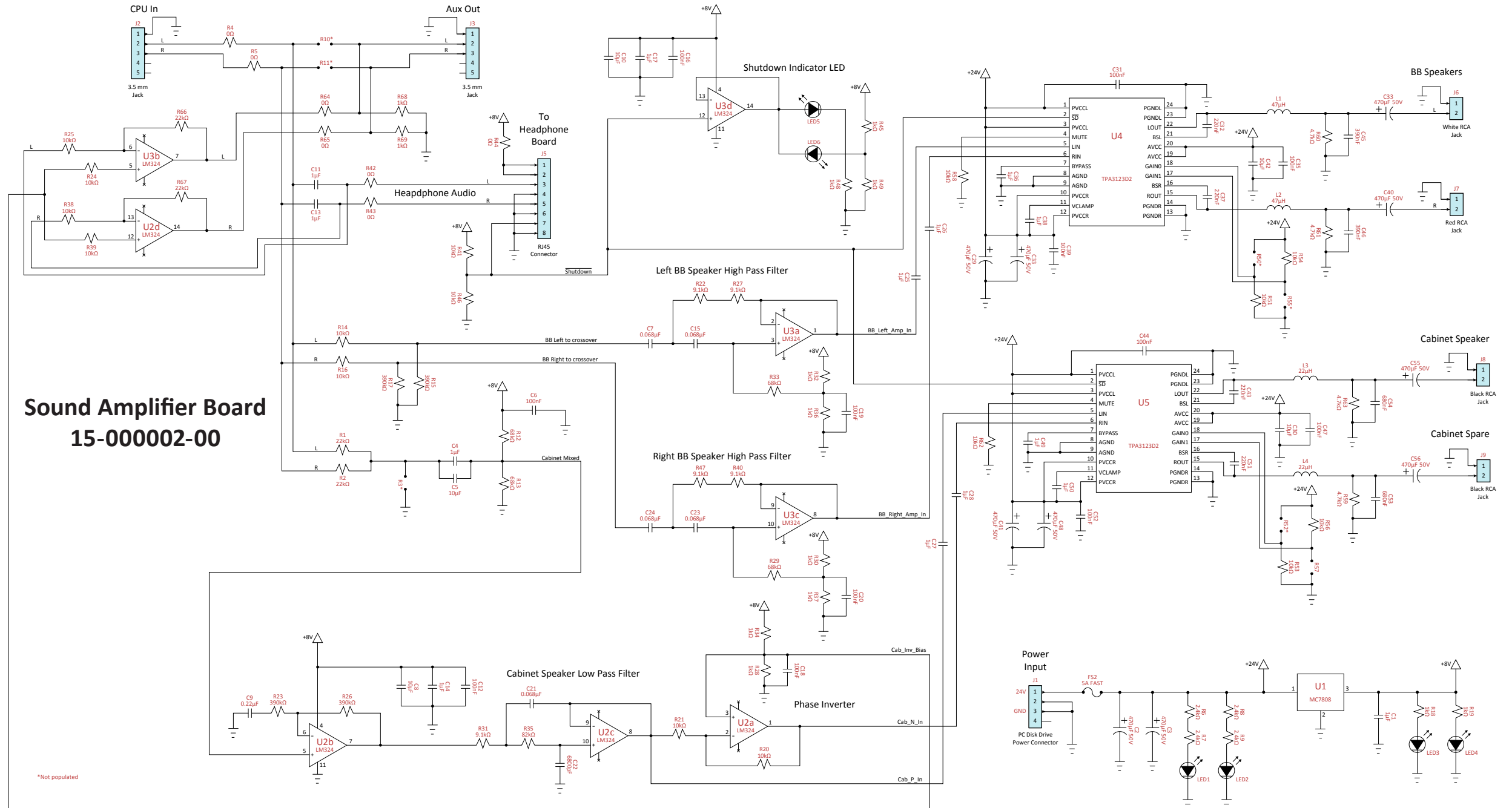
Component(s)	Part Number	Description
C1, C4, C11, C13, C14, C17, C25-C28, C36, C38, C49, C50	103-105K-025	Capacitor, MLCC, 0603 SMT, 1μF, 25V, 10%
C2, C3, C29, C33, C34, C40, C41, C48, C55, C56	109-470M-050	Capacitor, Elect (Radial), 470μF, 50V, 20%
C5, C8, C10, C30, C42	102-106M-050	Capacitor, MLCC, 1210 SMT, 10μF, 50V, 20%
C6, C12, C16, C18-C20, C31, C35, C39, C44, C47, C52	103-104K-050	Capacitor, MLCC, 0603 SMT, 100nF, 50V, 10%
C7, C15, C21, C23, C24	102-683G-016	Capacitor, MLCC, 1210 SMT, 0.068μF, 16V, 20%
C9	102-224M-016	Capacitor, MLCC, 1206 SMT, 0.22μF, 16V, 20%
C22	102-682G-050	Capacitor, MLCC, 1206 SMT, 6800pF, 50V, 2%
C32, C37, C43, C51	103-224K-050	Capacitor, MLCC, 0603 SMT, 220nF, 50V, 10%
C45, C46	104-394J-100	Capacitor, Polyester, Leaded, 390nF, 100V, 5%
C53, C54	104-684J-050	Capacitor, Polyester, Leaded, 680nF, 50V, 5%
FS1	22-8006-00	Fuse Holder, Mini Blade, 20A, 500V
FS1	170-3205-SB	Fuse, Fast-Acting, 5A, 32V, Mini Blade
L1, L2	190-0000-0S	Inductor, SMD, 470μH, 2.5A, 1kHz
L3, L4	190-0001-0S	Inductor, SMD, 22μH, 3.6A, 1kHz
LED1-LED5	24-0009-0S	LED, 0603 SMD, YEL/GRN, 572nm
LED6	24-0010-0S	LED, 0603 SMD, YEL, 589nm
R1, R2, R66, R67	122-022K-102	Resistor, 0603 SMT, 22kΩ, 0.1W, 1%
R4, R5, R42-R44, R64, R65	122-0000-100	Resistor, 0603 SMT, 0Ω, 0.1W
R6-R9	122-02K4-122	Resistor, 0603 SMT, 2.4kΩ, 0.125W, 5%
R12, R13, R29, R33	122-068K-102	Resistor, 0603 SMT, 68kΩ, 0.1W, 1%
R14, R16, R20, R21, R24, R25, R38, R39, R41, R46, R51, R53, R54, R56, R58, R62	122-010K-102	Resistor, 0603 SMT, 10kΩ, 0.1W, 1%
R15, R17, R23, R26	122-390K-102	Resistor, 0603 SMT, 390kΩ, 0.1W, 1%
R18, R19, R28, R30, R32, R34, R36, R37, R45, R48, R49, R68, R69	122-001K-102	Resistor, 0603 SMT, 1kΩ, 0.1W, 1%

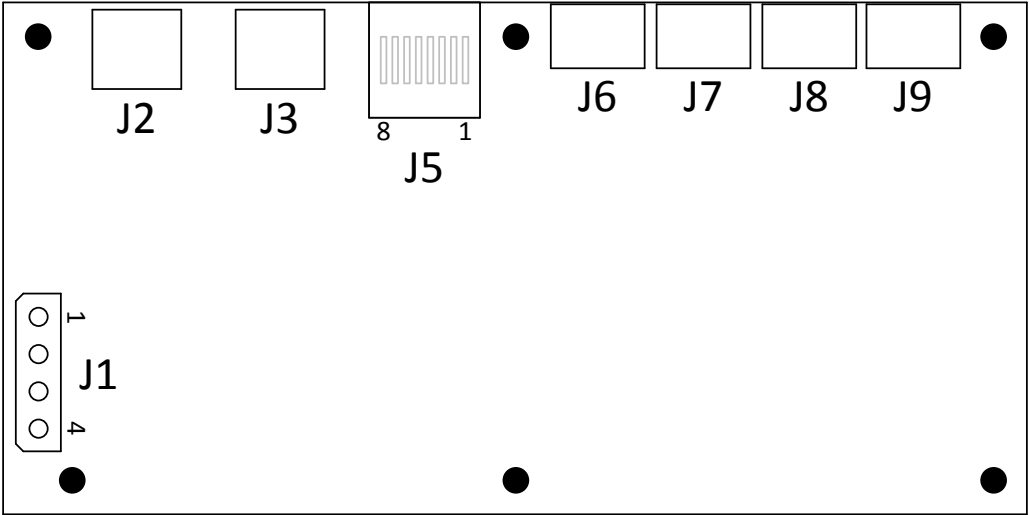
Component(s)	Part Number	Description
R22, R27, R31, R40, R47	122-09K1-102	Resistor, 0603 SMT, 9.1kΩ, 0.1W, 1%
R35	122-082K-102	Resistor, 0603 SMT, 82kΩ, 0.1W, 1%
R59-R61, R63	122-04K7-102	Resistor, 0603 SMT, 4.7kΩ, 0.1W, 1%
R3, R10, R11, R50, R52, R55, R57		Not Populated
U1	142-0002-0S	Voltage Regulator, MC7808, TO-252-3 SMT, 8V, 1A
U2, U3	140-0003-0S	Op Amp, Quad, LM324, SO-14 SMT
U4, U5	140-0004-0S	Audio Amp, Stereo, TPA3123, HTSSOP-24 SMT
J1	31-2502-04	Connector Header, 4-pin, Power
J2	30-2506-05	Jack Header, 3.5mm, Rt Angle, Green
J3	30-2506-12	Jack Header, 3.5mm, Rt Angle, Pink
J5	30-2508-00	Jack Header, RJ45 (Ethernet)
J6	30-2507-09	Jack Header, RCA, Right Angle, White
J7	30-2507-02	Jack Header, RCA, Right Angle, Red
J8, J9	30-2507-00	Jack Header, RCA, Right Angle, Black



# Sound Amplifier Board 15-000002-00

\*Not populated





Sound Amplifier Board, 15-000002-00  
Connector Pin-outs

- J1 DC Power Input**
- |      |          |                                    |
|------|----------|------------------------------------|
| J1-1 | BRN      | +24VDC from Primary ATX Pwr Supply |
| J1-2 | Not Used |                                    |
| J1-3 | BLK      | Ground from Primary ATX Pwr Supply |
| J1-4 | Not Used |                                    |

**J2 Audio Input**  
3.5mm audio cable from CPU Board (audio out),

**J3 Auxiliary Output**  
Not Used

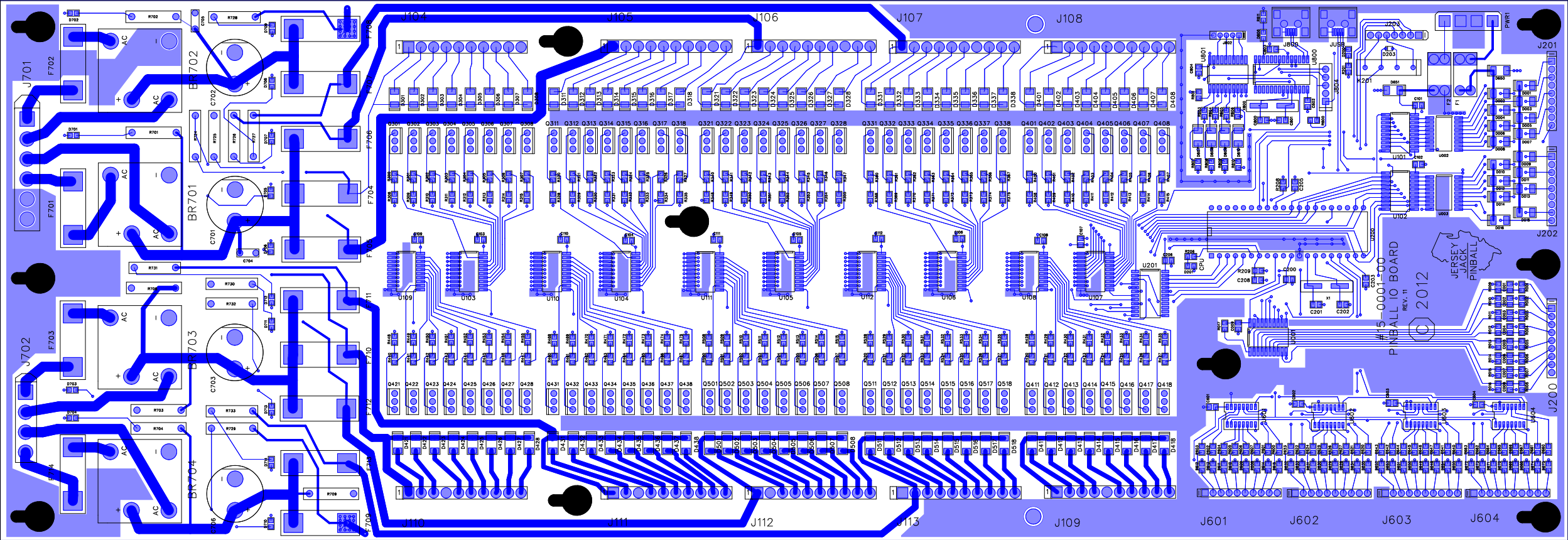
**J5 Headphone/Volume Control Connection**  
Not Used

- J6 Backbox Speaker Connection (Left)**  
RCA cable (BLK-WHT, BLK) to left backbox speaker
- J7 Backbox Speaker Connection (Right)**  
RCA cable (RED-WHT, BLK) to right backbox speaker

**J8 Cabinet Speaker Connection**  
RCA cable to cabinet subwoofer speaker

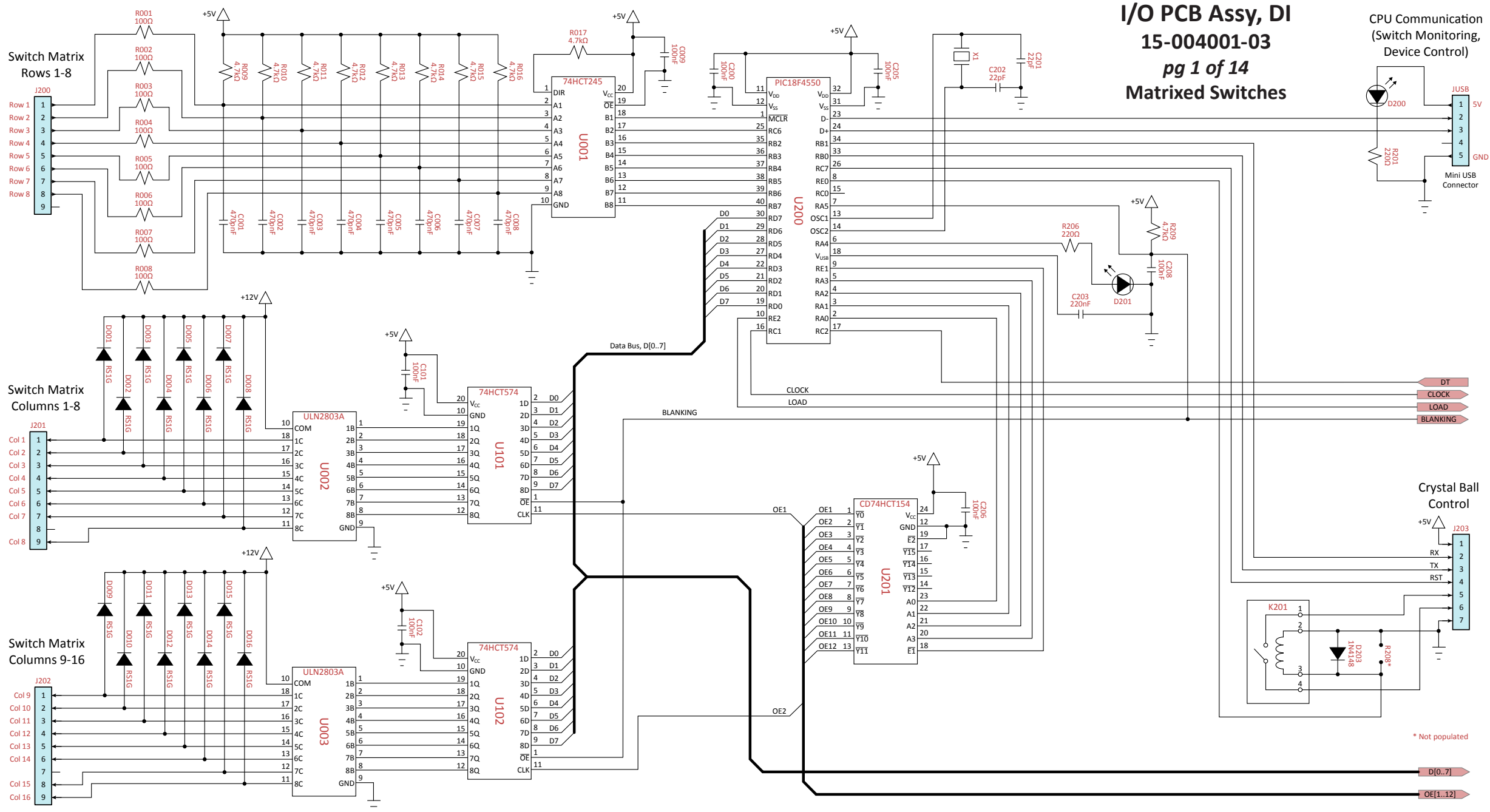
**J9 Cabinet Speaker Spare**  
Not Used



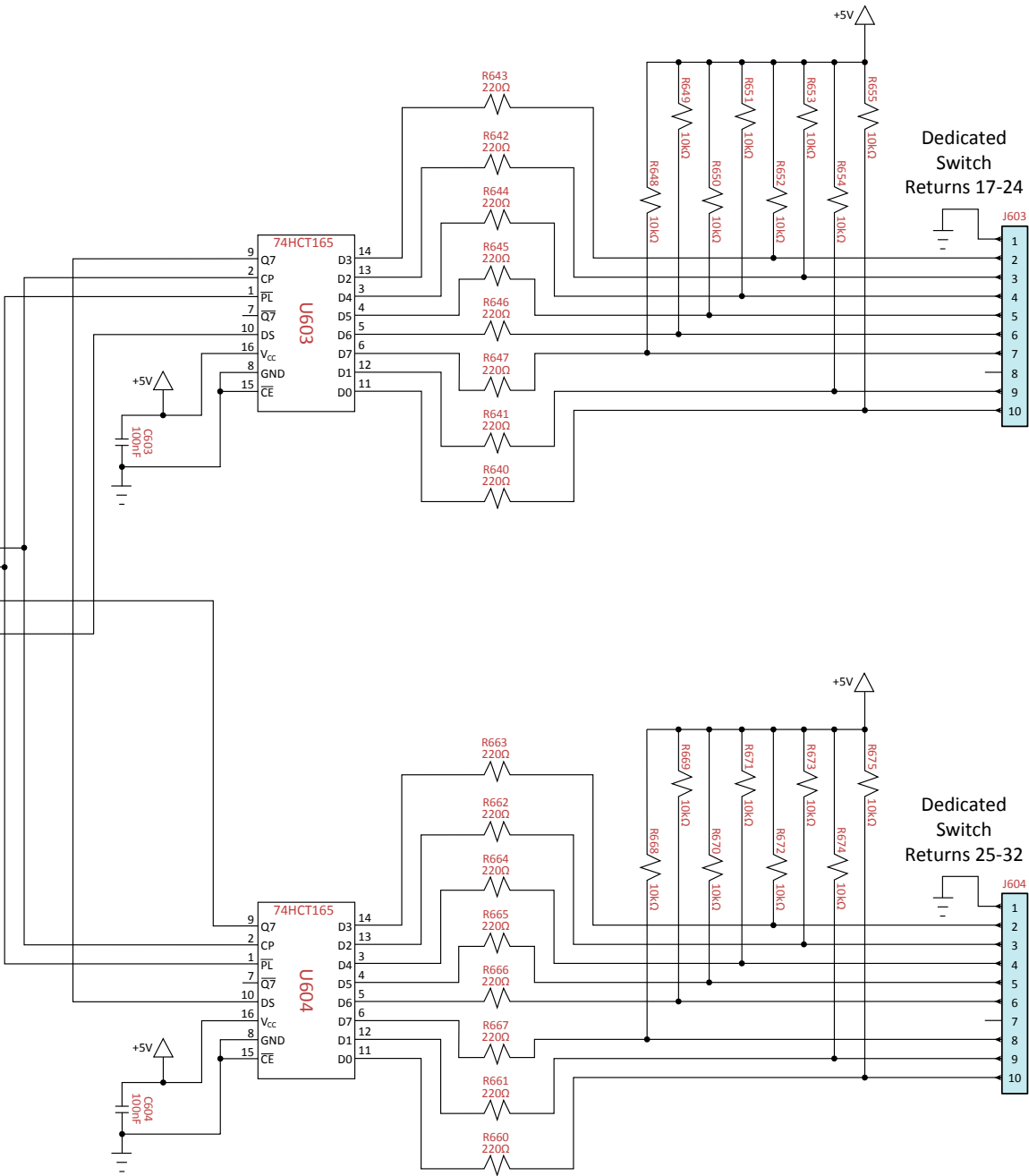
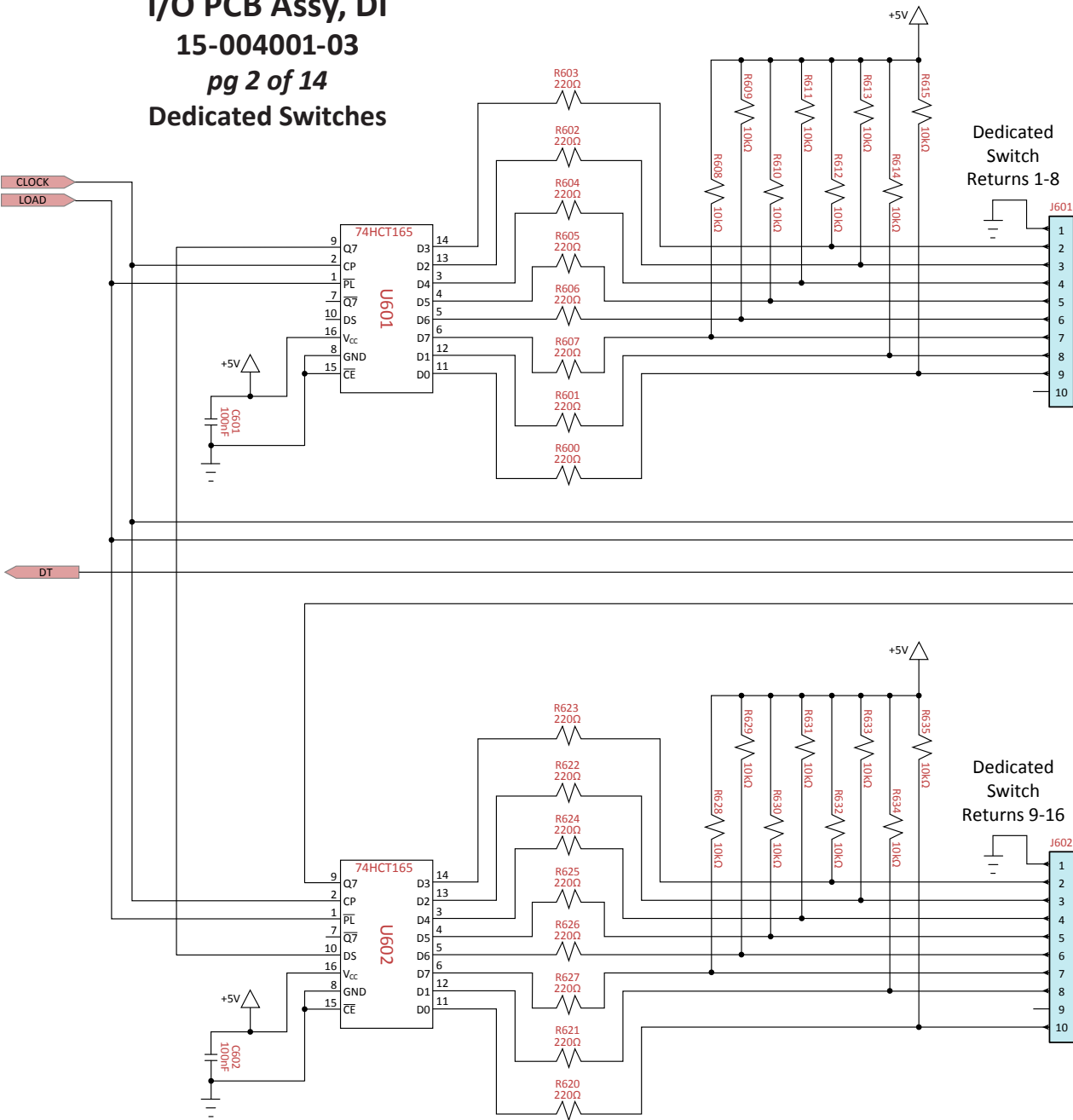


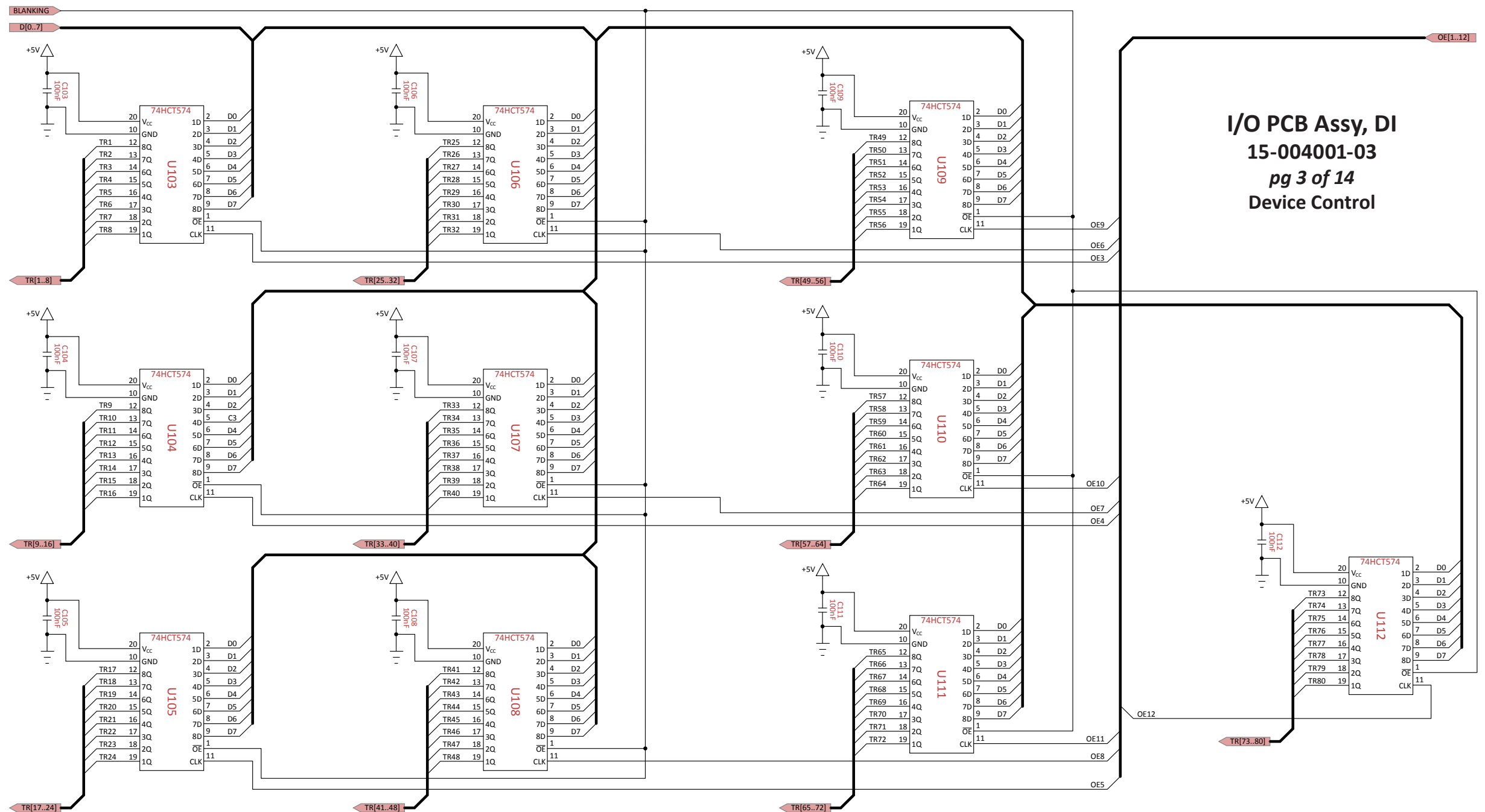
Component(s)	Part Number	Description
D301, D311, D312, D321, D322, D325, D327, D331-D334, D338, D401-D404, D407, D421-D428, D434-D438, D501-D508, D514-D516, D806-D810		Not Populated
F701, F702	170-0110-SM	Fuse, Time Delay, 10A, 250V, 5mm x 20mm
F703, F706, F707	170-0163-SM	Fuse, Time Delay, 6.3A, 250V, 5mm x 20mm
F704, F708	170-0105-SM	Fuse, Time Delay, 5A, 250V, 5mm x 20mm
F705	170-0107-SM	Fuse, Time Delay, 7A, 250V, 5mm x 20mm
F710, F711, F712, F714	170-0104-SM	Fuse, Time Delay, 4A, 250V, 5mm x 20mm
F709	170-0103-SM	Fuse, Time Delay, 3A, 250V, 5mm x 20mm
F713	170-0102-SM	Fuse, Time Delay, 2A, 250V, 5mm x 20mm
F1, F2	170-3201-FB	Fuse, Fast-Acting, 1A, 32V, Mini Blade
F701-F714	22-8007-00	Fuse Holder, 5mm x 20mm, SMD, 250V, 10A
F1,F2	22-8006-00	Fuse Holder, Mini Blade, 500V, 20A
K201	160-0001-OT	Relay, Reed, SPST, Normally Open, 10W, 0.5A
Q302-Q308, Q313-Q318, Q323, Q324, Q326, Q328, Q335-Q337, Q405, Q406, Q408, Q411-Q418, Q431-Q433, Q511-Q513, Q517, Q518	130-0000-OT	MOSFET, IRL540, N-Ch, TO-220AB, 100V, 36A
Q301, Q311, Q312, Q321, Q322, Q325, Q327, Q331-Q334, Q338, Q401-Q404, Q407, Q421-Q428, Q434-Q438, Q501-Q508, Q514-Q516		Not Populated
R201, R206, R301-R307, R322-R327, R342, R343, R345, R347, R364-R366, R404, R405, R407, R420-R427, R460-R462, R400, R520-R522, R526, R527, R600-R607, R620-R627, R640-R647, R660-R667	120-0220-254	Resistor, 0805 SMT, 220Ω, 0.25W, 5%
R209, R802, R009-R017	120-04K7-254	Resistor, 0805 SMT, 4.7kΩ, 0.25W, 5%
R309-R315, R330-R335, R350, R351, R353, R355, R372-R374, R412, R413, R415, R428-R435, R468-R470, R528-R530, R534, R535	120-001K-404	Resistor, 0805 SMT, 1kΩ, 0.4W, 5%

Component(s)	Part Number	Description
R608-R615, R628-R635, R648-R655, R668-R675	120-010K-254	Resistor, 0805 SMT, 10kΩ, 0.25W, 5%
R701, R702, R724-R728	121-06K8-2H4	Resistor, Leaded, 6.8kΩ, 2W, 5%
R703, R730-R732	121-02K7-2H4	Resistor, Leaded, 2.7kΩ, 2W, 5%
R704, R729, R733	121-01K2-2H4	Resistor, Leaded, 1.2kΩ, 2W, 5%
R708, R709	121-0470-2H4	Resistor, Leaded, 470Ω, 2W, 5%
R001-R008	120-0100-254	Resistor, 0805 SMT, 100Ω, 0.25W, 5%
R208, R300, R308, R320, R321, R328, R329, R340, R341, R344, R346, R348, R349, R352, R354, R360-R363, R367, R368-R371, R375, R400-R403, R406, R408-R411, R414, R440-R455, R463-R467, R471-R475, R500-R515, R523-R525, R531-R533, R800, R801, R803-R811		Not Populated
U001	141-0008-0S	Octal Bus XCVRs w/3-State Outputs, 74HC245, SOIC-20 SMT
U002, U003	141-0009-0S	Darlington Transistor Array, ULN2803A, SOIC-18 SMT, NPN
U101-U112	141-0010-0S	Octal D-Type Flip-Flops w/3-State Outputs, 74HCT574, SOIC-20 SMT
U200	141-0011-0T	Microcontroller, 8-Bit, USB, 48MHz, PIC18F4550, PDIP-40
U200	31-3000-0T	DIP Socket, 40-pin, 2.54mm Pitch
U201	141-0012-0S	4- to 16-Line Decoder, CMOS, CD74HCT154, SOIC-24 SMT
U601-U604	141-0013-0S	Shift Register, Serial/Parallel to Serial, 8-Bit, 74HCT165, SOIC-16 SMT
U800, U801		Not Populated
X1	160-0002-0S	Crystal, 8MHz, ATS08ASM-1E, SMT, 20pF, 30PPM
X800		Not Populated
J104-J113	31-2505-10	Header, Male, 10-pin, 3.96mm
J200, J201, J202	31-2504-09	Header, Male, 9-pin, 2.54mm
J203	31-2501-07	Header, Male, 7-pin, Rt Angle, 2.54mm
J601-J604	31-2504-10	Header, Male, 10-pin, 2.54mm
J701	31-2506-06	Header, Male, 6-pin, .250" Centerline
J702	31-2506-04	Header, Male, 4-pin, .250" Centerline
JUSB	31-2507-00	Receptacle, Mini USB 2.0, Type B, SMT
J800, J802, J804		Not Populated
PWR1	31-2502-04	Connector Header, Male, 4-pin, Power



I/O PCB Assy, DI  
15-004001-03  
pg 2 of 14  
Dedicated Switches

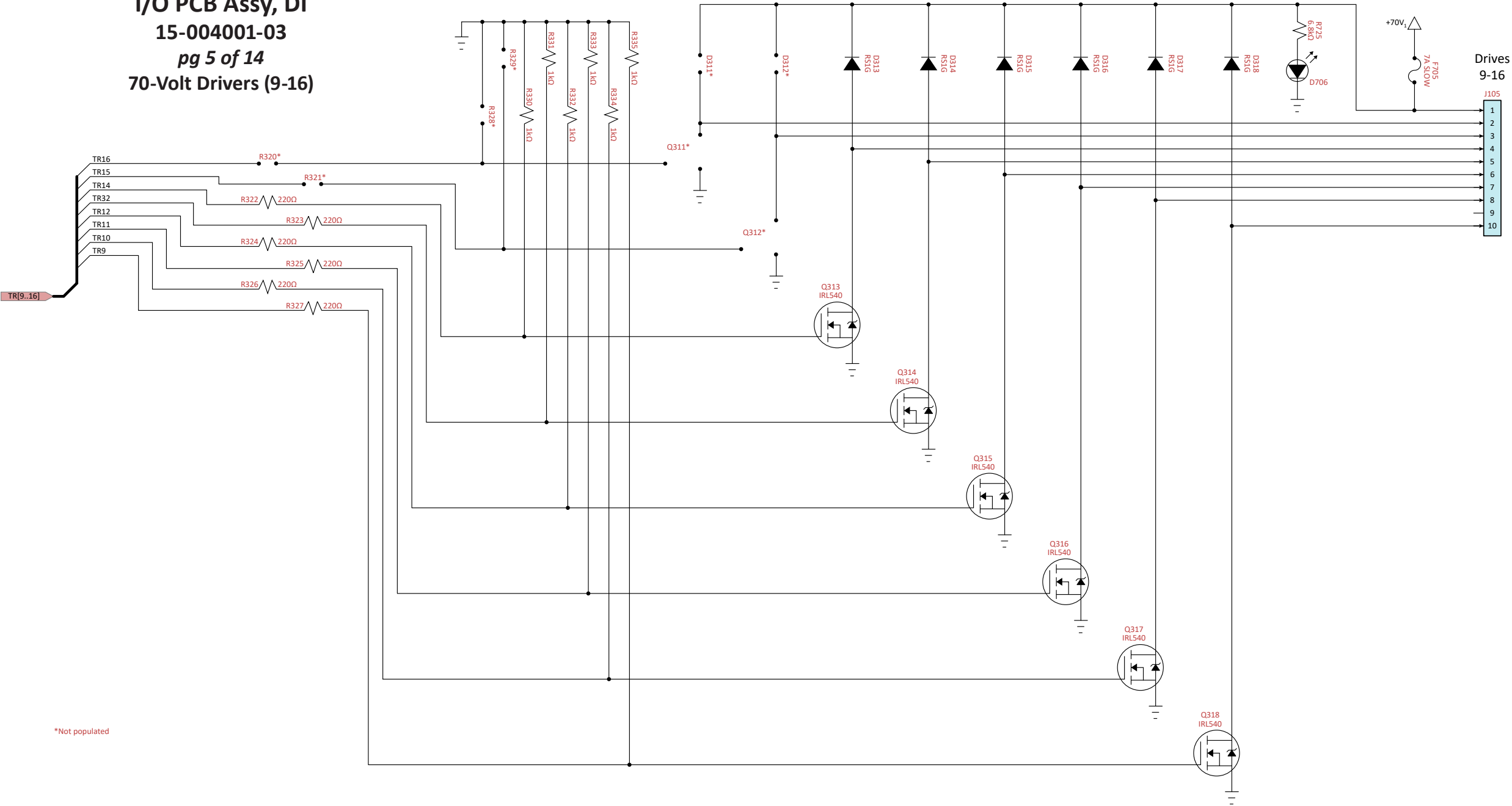








I/O PCB Assy, DI  
15-004001-03  
pg 5 of 14  
70-Volt Drivers (9-16)

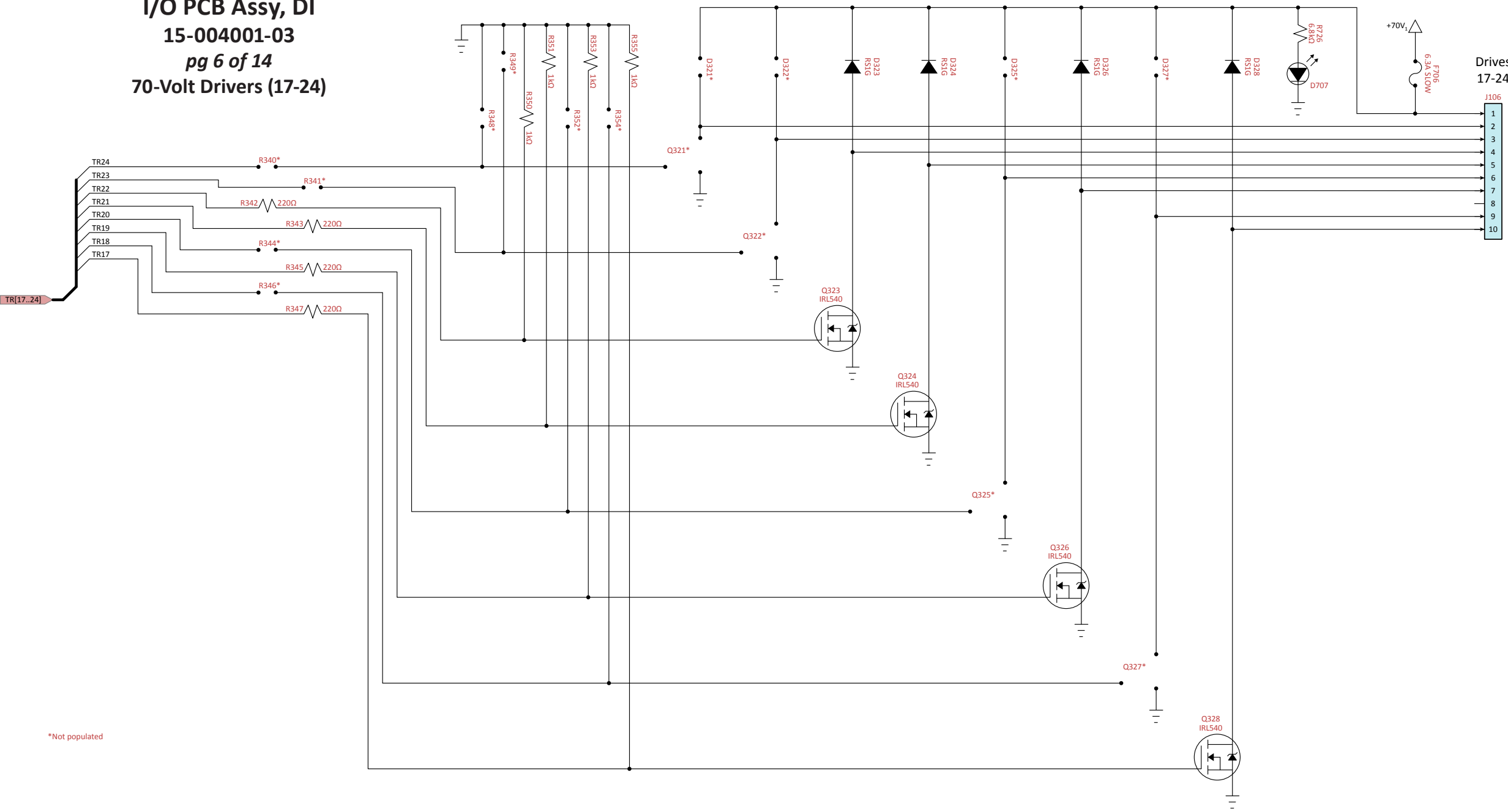


I/O PCB Assy, DI

15-004001-03

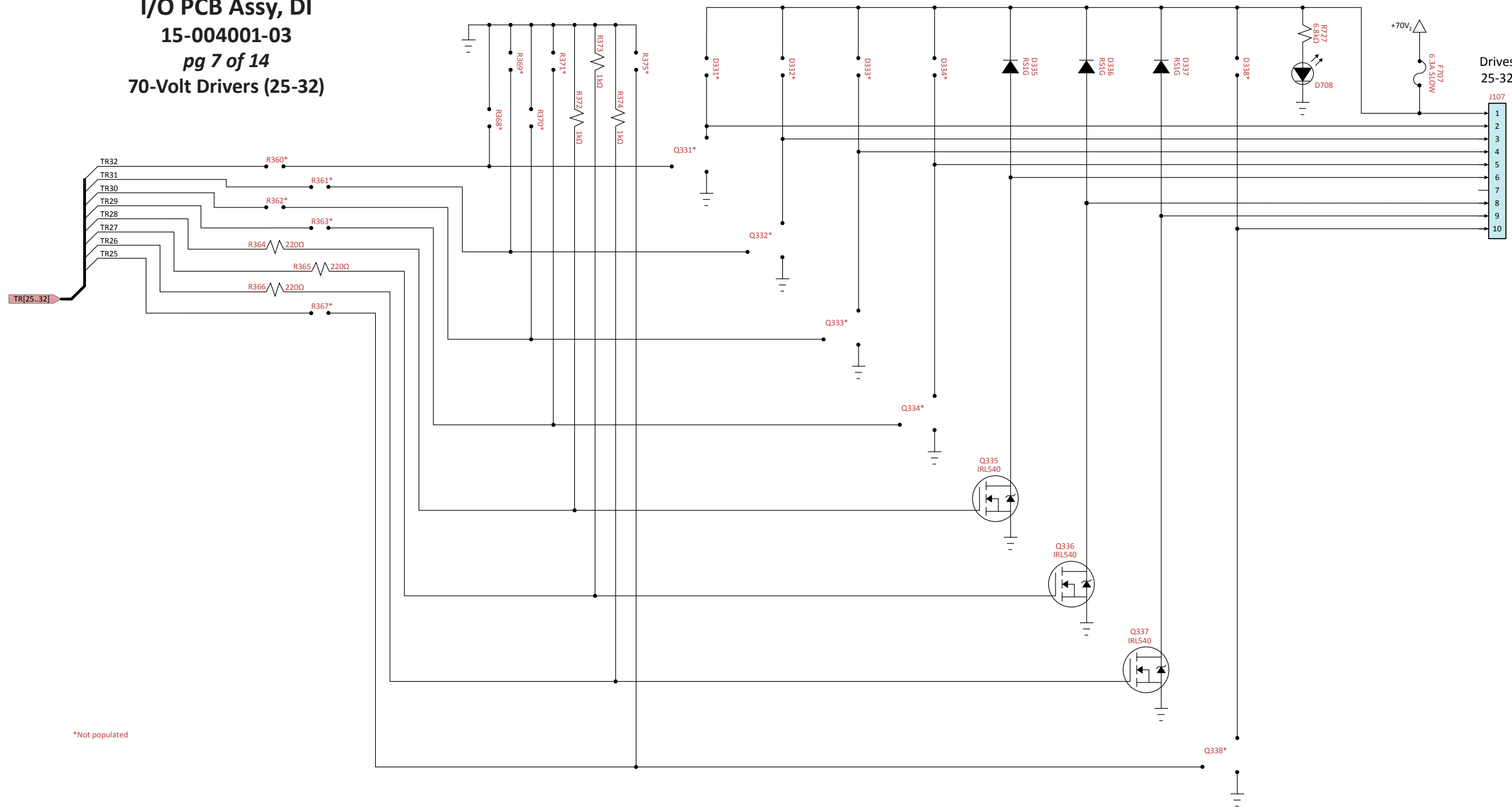
pg 6 of 14

70-Volt Drivers (17-24)



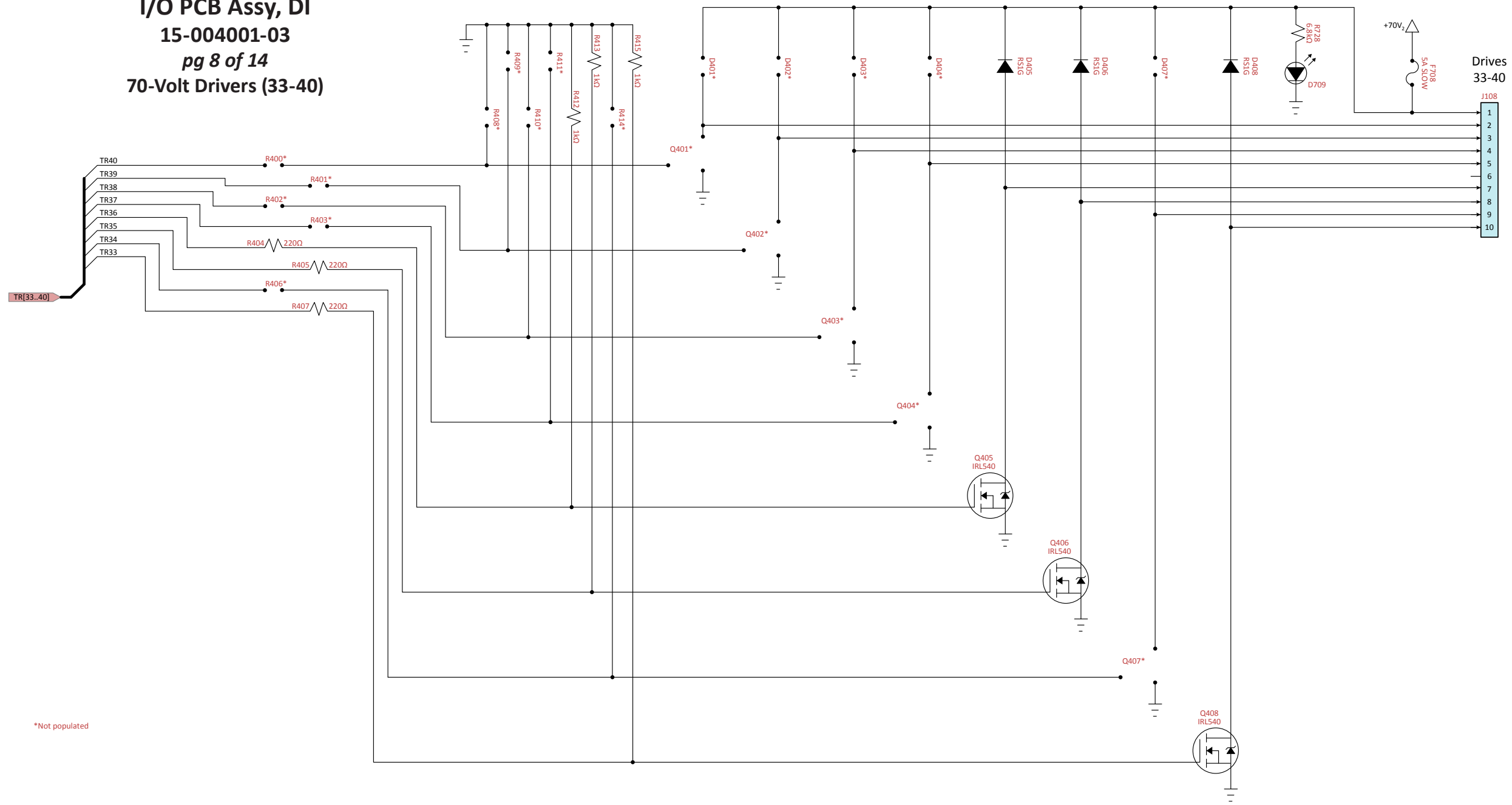
\*Not populated

I/O PCB Assy, DI  
15-004001-03  
pg 7 of 14  
70-Volt Drivers (25-32)



\*Not populated

I/O PCB Assy, DI  
15-004001-03  
pg 8 of 14  
70-Volt Drivers (33-40)



\*Not populated

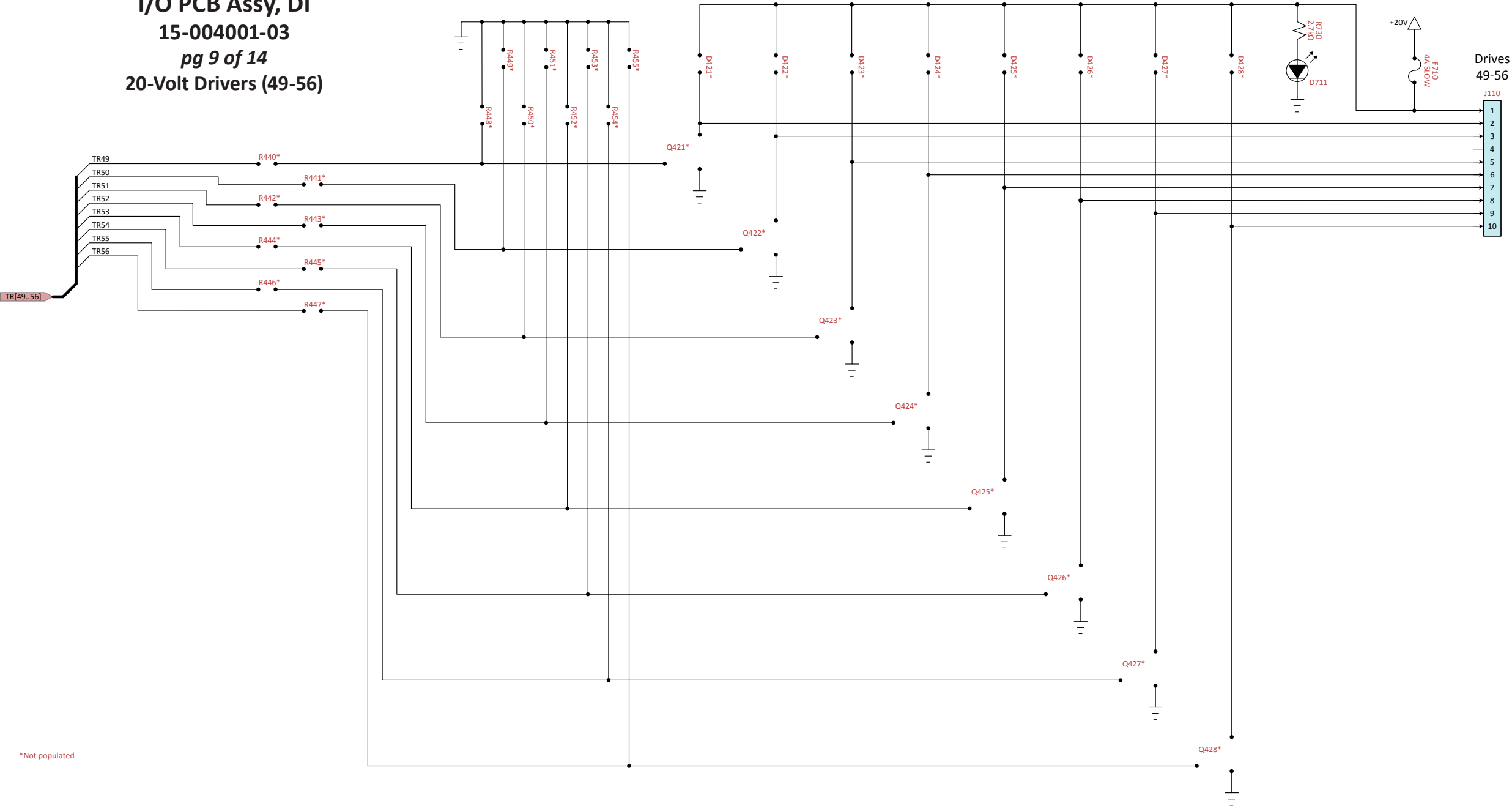


I/O PCB Assy, DI

15-004001-03

pg 9 of 14

20-Volt Drivers (49-56)

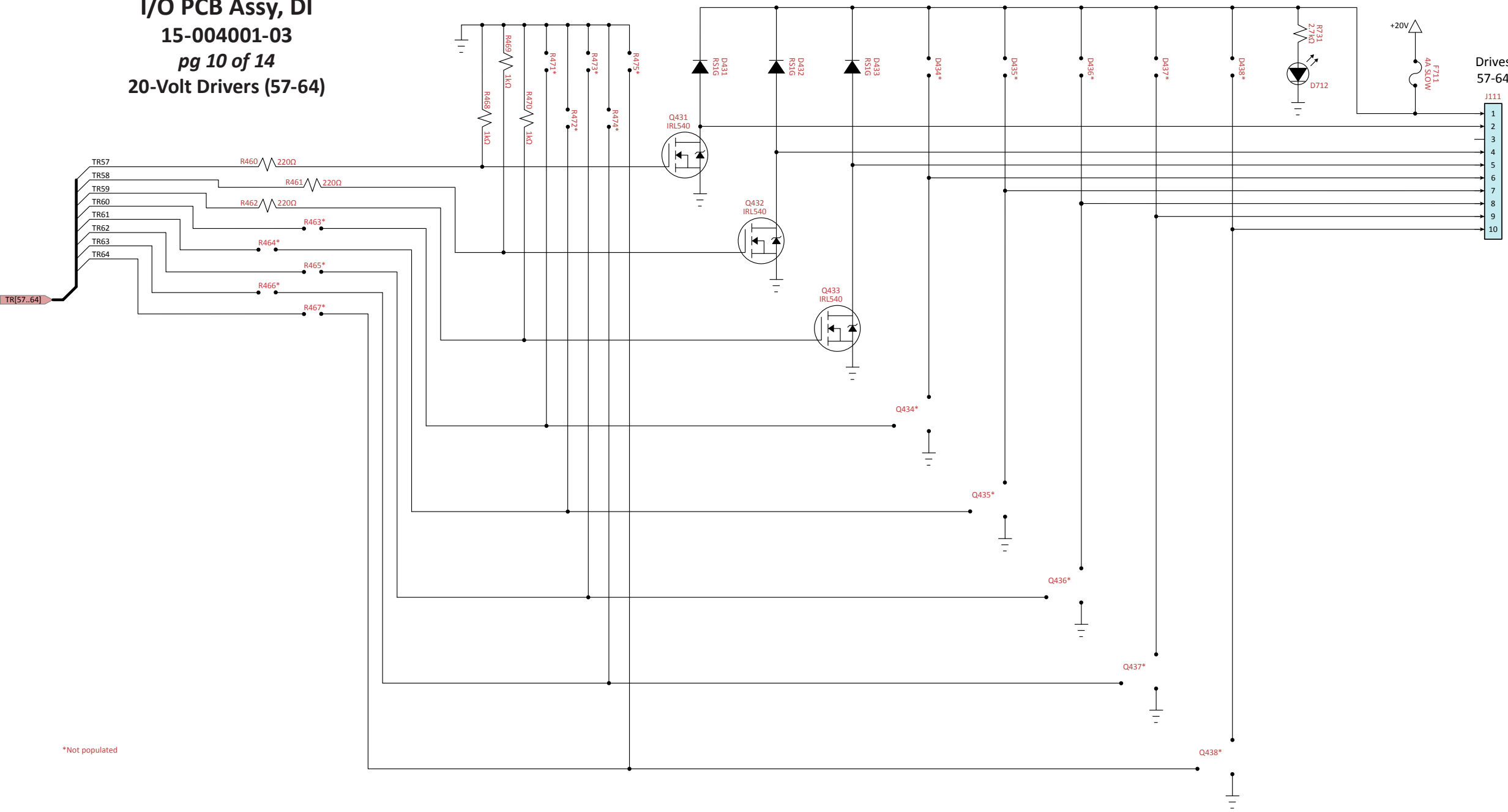


I/O PCB Assy, DI

15-004001-03

pg 10 of 14

20-Volt Drivers (57-64)



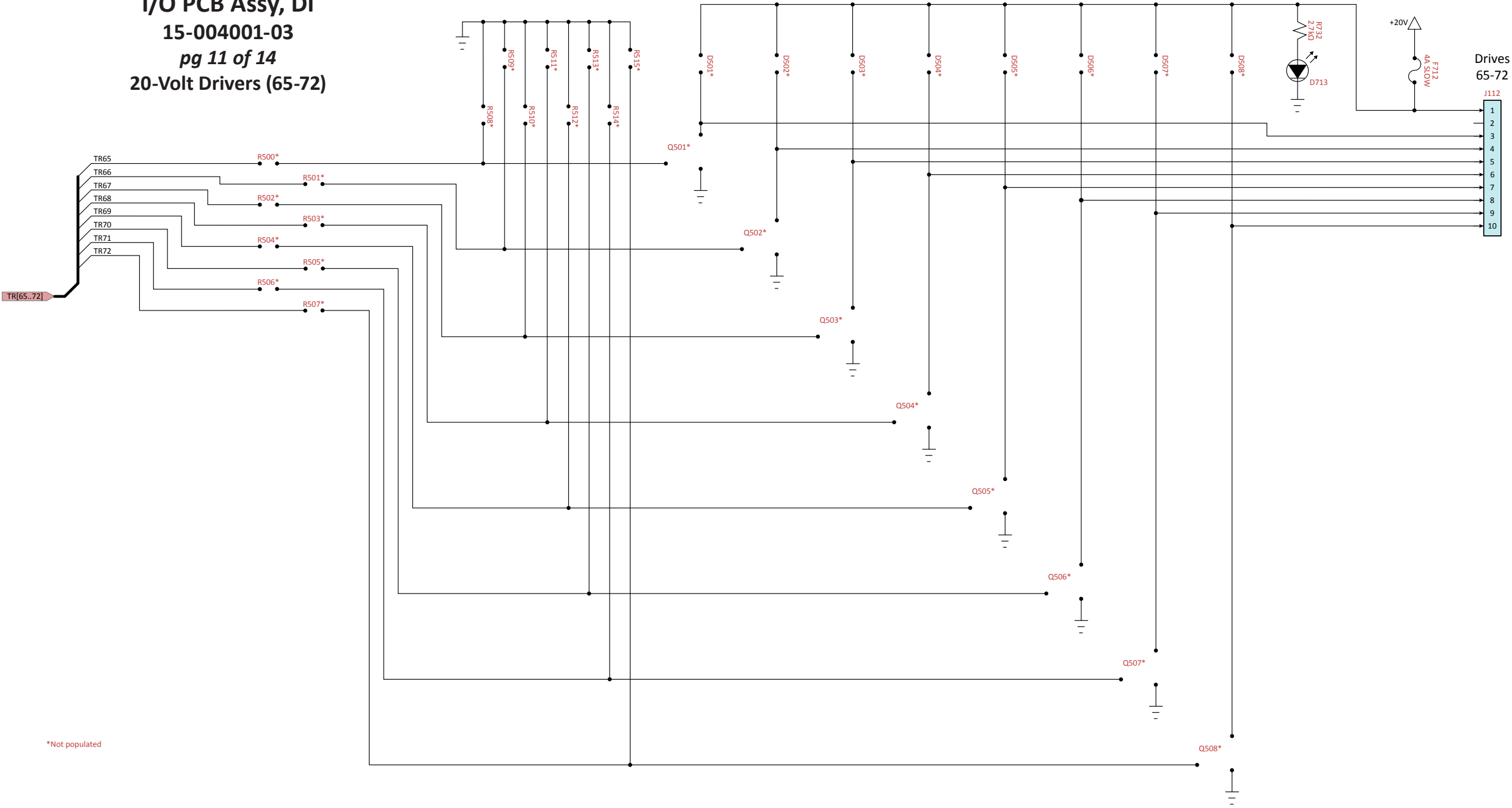
\*Not populated

I/O PCB Assy, DI

15-004001-03

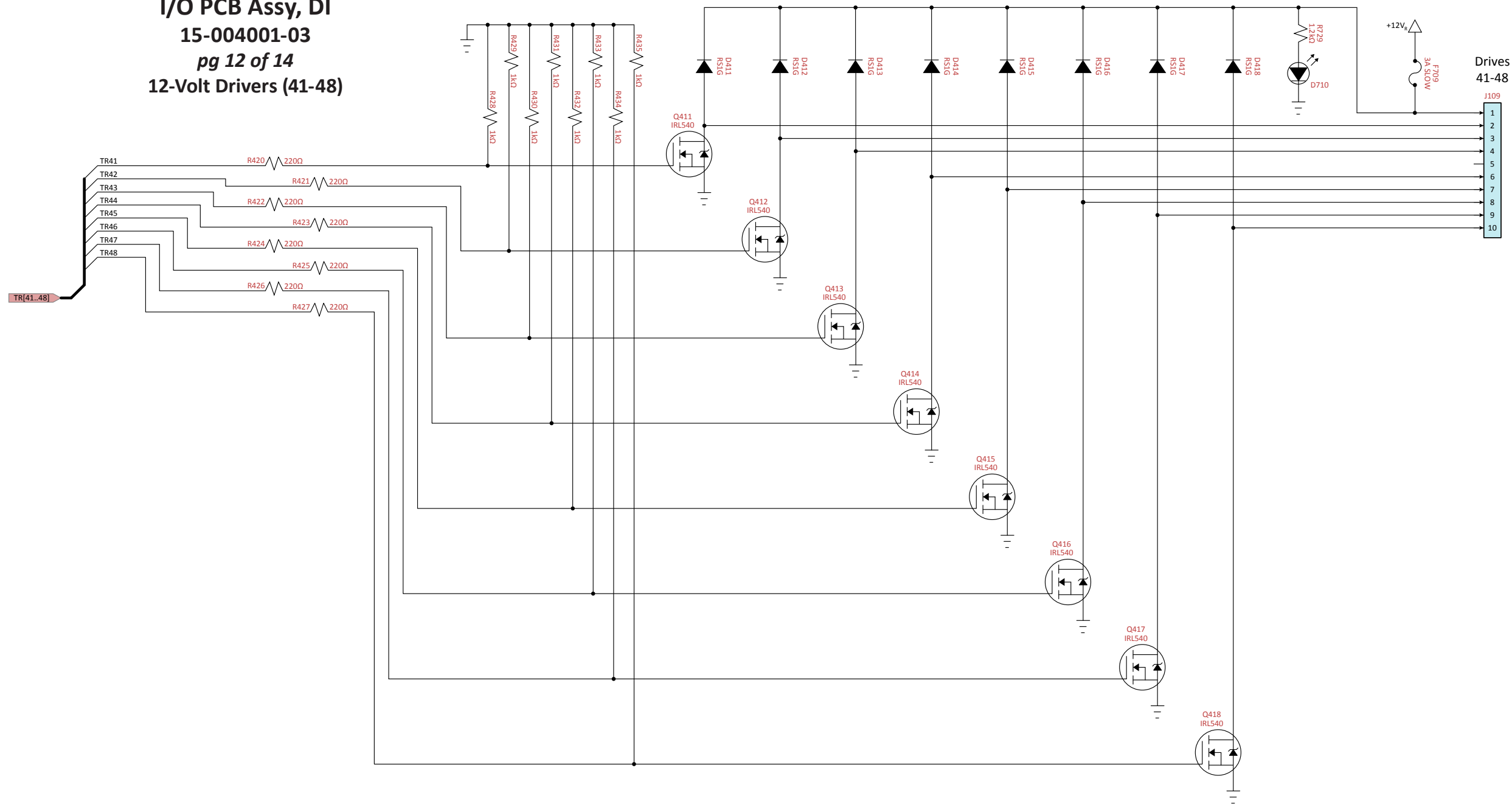
pg 11 of 14

20-Volt Drivers (65-72)



\*Not populated

I/O PCB Assy, DI  
15-004001-03  
pg 12 of 14  
12-Volt Drivers (41-48)

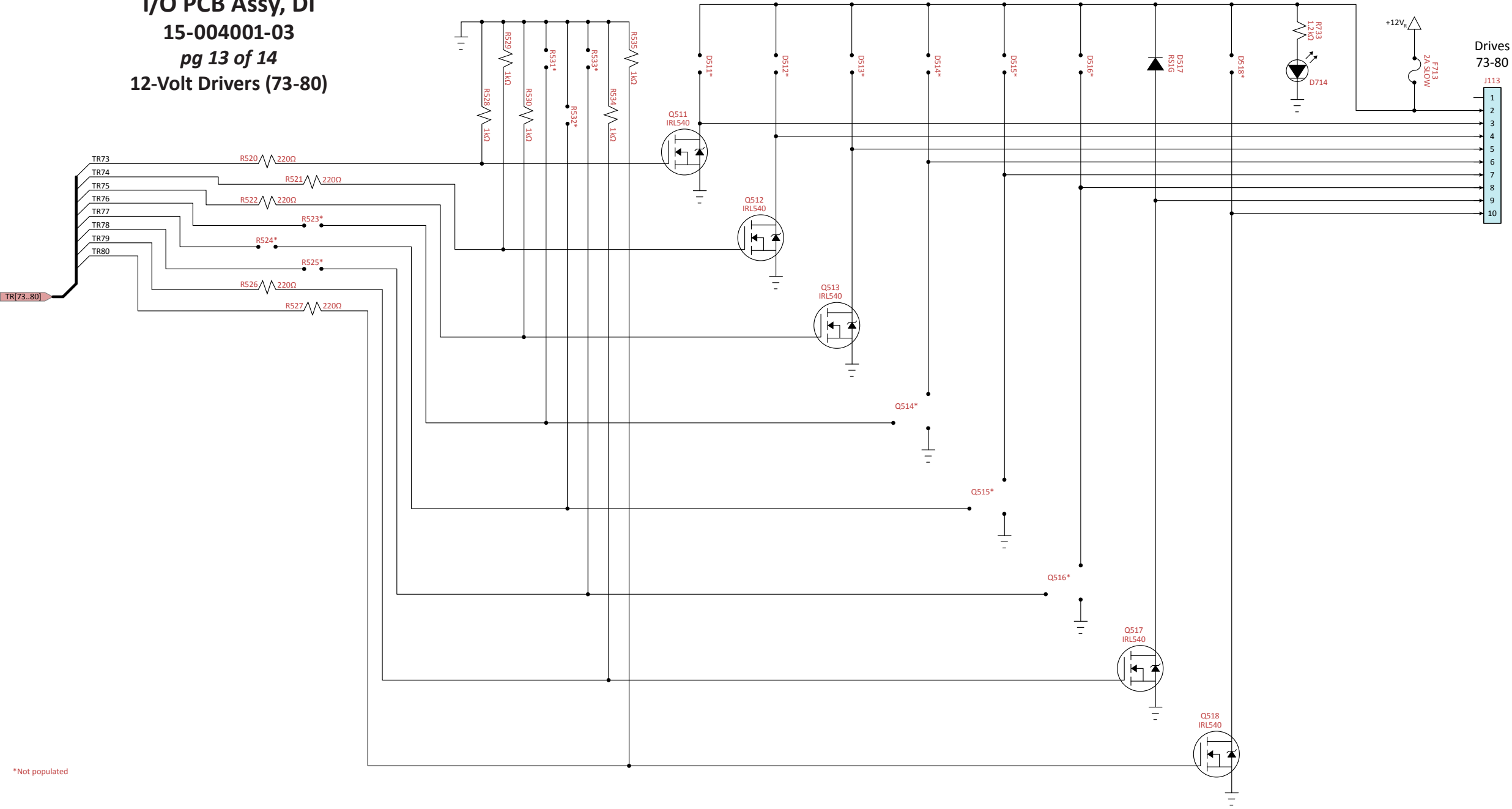


I/O PCB Assy, DI

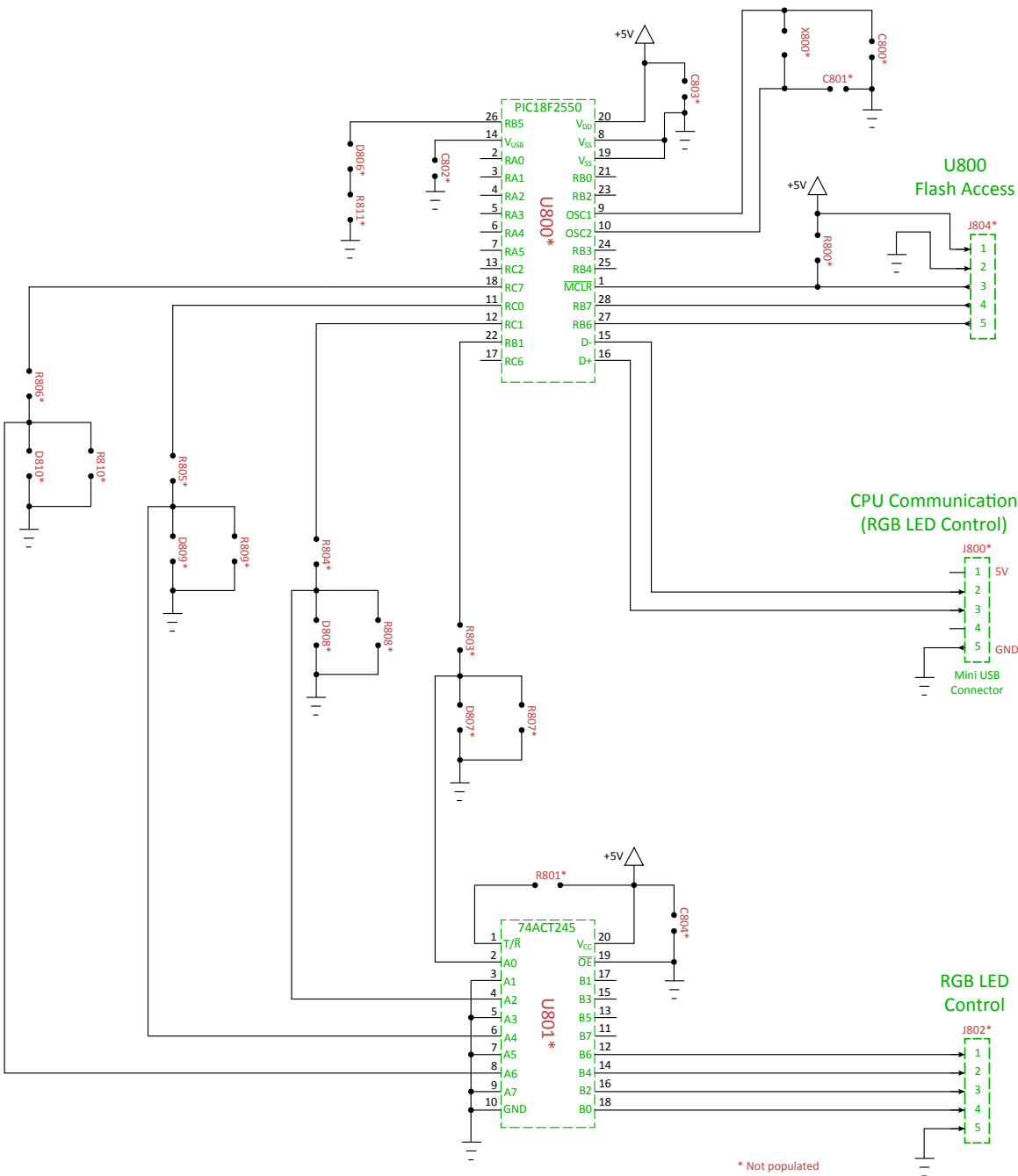
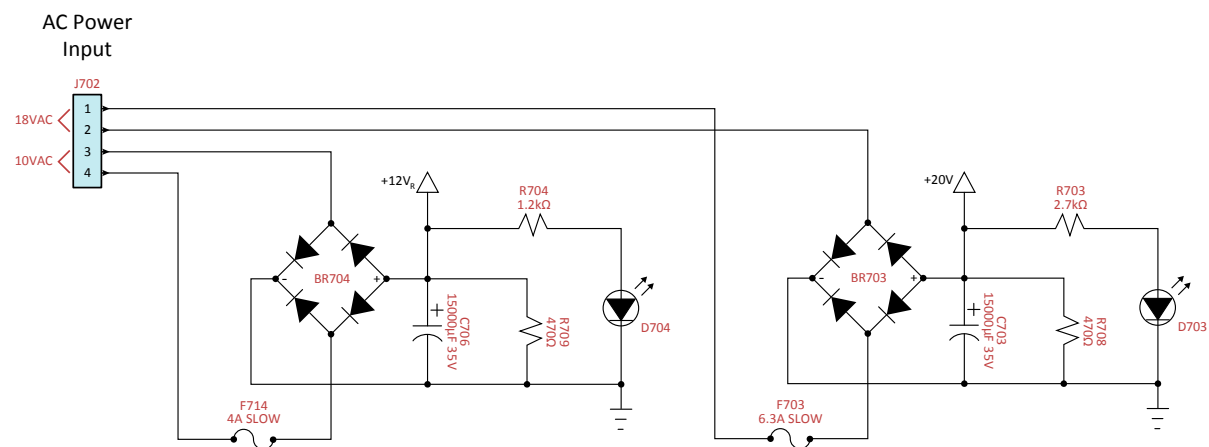
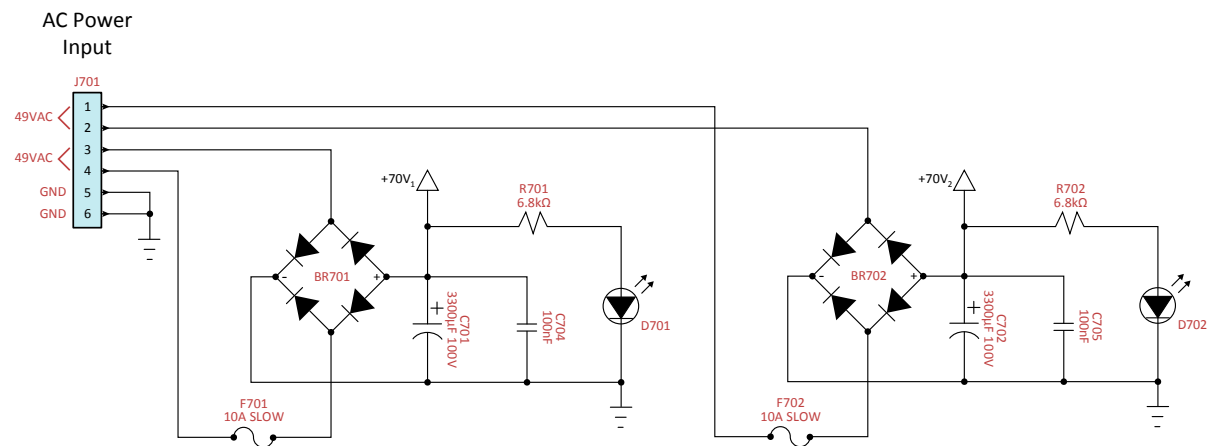
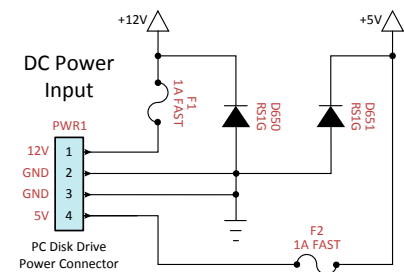
15-004001-03

pg 13 of 14

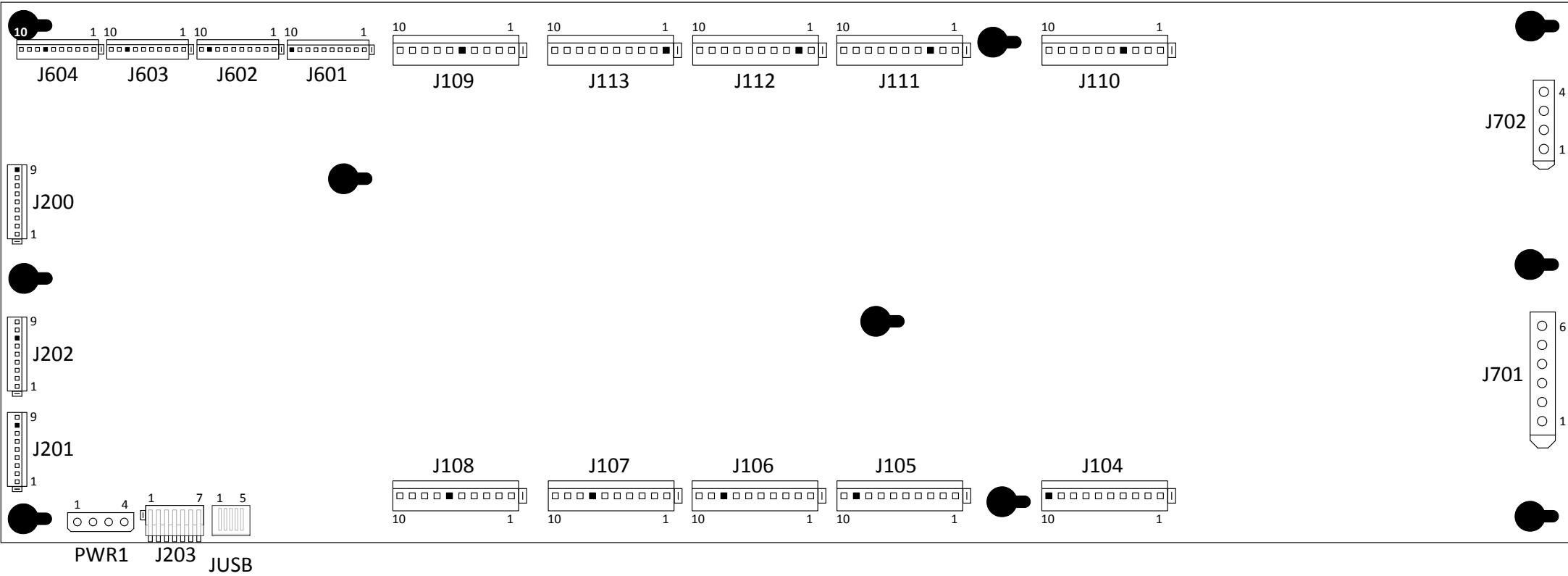
12-Volt Drivers (73-80)



I/O PCB Assy, DI  
15-004001-03  
pg 14 of 14  
Power Input/Rectification







I/O PCB Assy, DI  
15-004001-03  
Connector Pin-outs

J104 70-Volt Coil Drives (1-8)

J104-1	BRN	+70VDC supply to coils below
J104-2	BRN-VIO	Not Used
J104-3	BRN-BLU	Coil drive 7 [Knocker]
J104-4	BRN-GRN	Coil drive 6 [Phone Scoop Eject]
J104-5	BRN-YEL	Coil drive 5 [Skill Shot Kicker]
J104-6	BRN-ORN	Coil drive 4 [Theater Magnet]
J104-7	BRN-RED	Coil drive 3 [Lower Pop Bumper]
J104-8	BRN-GRY	Coil drive 2 [Right Pop Bumper]
J104-9	BRN-BLK	Coil drive 1 [Left Pop Bumper]
J104-10	Key	

J105 70-Volt Coil Drives (9-16)

J105-1	RED	+70VDC supply to coils below
J105-2	RED-VIO	Not Used
J105-3	RED-BLU	Not Used
J105-4	RED-GRN	Coil drive 14 [Upper Right Flipper Hold]
J105-5	RED-YEL	Coil drive 13 [Upper Right Flipper Power]
J105-6	RED-ORN	Coil drive 12 [Right Flipper Hold]
J105-7	RED-GRY	Coil drive 11 [Right Flipper Power]
J105-8	RED-BRN	Coil drive 10 [Left Flipper Hold]
J105-9	Key	
J105-10	RED-BLK	Coil drive 9 [Left Flipper Power]

J106 70-Volt Coil Drives (17-24)

J106-1	ORN	+70VDC supply to coils below
J106-2	ORN-VIO	Not Used
J106-3	ORN-BLU	Not Used
J106-4	ORN-GRN	Coil drive 22 [5-Ball Trough VUK]
J106-5	ORN-YEL	Coil drive 21 [Ball Auto-Launch]
J106-6	ORN-GRY	Not Used
J106-7	ORN-RED	Coil drive 19 [Kickback]
J106-8	Key	
J106-9	ORN-BRN	Not Used
J106-10	ORN-BLK	Coil drive 17 [Drone Magnet]

J107 70-Volt Coil Drives (25-32)

J107-1	TAN	+70VDC supply to coils/magnets below
J107-2	TAN-VIO	Not Used
J107-3	TAN-BLU	Not Used
J107-4	TAN-GRN	Not Used
J107-5	TAN-YEL	Not Used
J107-6	TAN-ORN	Coil drive 28 [Left Magnet]
J107-7	Key	
J107-8	TAN-RED	Coil drive 27 [Right Magnet]
J107-9	TAN-BRN	Coil drive 26 [Upper Magnet]
J107-10	TAN-BLK	Not Used

J108 70-Volt Coil Drives (33-40)

J108-1	PNK	+70VDC supply to coils below
J108-2	PNK-VIO	Not Used
J108-3	PNK-BLU	Not Used
J108-4	PNK-GRN	Not Used
J108-5	PNK-YEL	Not Used
J108-6	Key	
J108-7	PNK-ORN	Coil drive 36 [Bob Trap Door Open]
J108-8	PNK-RED	Coil drive 35 [Bob Trap Door Latch Release]
J108-9	PNK-BRN	Not Used
J108-10	PNK-BLK	Not Used

J109 12-Volt Coil Drives (41-48)

J109-1	YEL	+12VDC supply to motors/lights below
J109-2	YEL-BLK	Coil drive 41 [Moving Target Motor]
J109-3	YEL-BRN	Coil drive 42 [Moving Target Relay]
J109-4	YEL-RED	Not Used
J109-5	Key	
J109-6	YEL-ORN	Coil drive 44 [Betty Spotlight]
J109-7	YEL-GRY	Coil drive 45 [Betty Diverter Motor]
J109-8	YEL-GRN	Coil drive 46 [Top Drone Motor]
J109-9	YEL-BLU	Coil drive 47 [Center Drone Motor]
J109-10	YEL-VIO	Coil drive 48 [Bottom Drone Motor]

J110 20-Volt Coil Drives (49-56)

J110-1	PLM	Not Used
J110-2	PLM-BLK	Not Used
J110-3	PLM-BRN	Not Used
J110-4	Key	
J110-5	PLM-RED	Not Used

J110-6	PLM-ORN	Not Used
J110-7	PLM-YEL	Not Used
J110-8	PLM-GRN	Not Used
J110-9	PLM-BLU	Not Used
J110-10	PLM-GRY	Not Used

J111 20-Volt Coil Drives (57-64)

J111-1	BLU	+20VDC supply to coils below
J111-2	BLU-BLK	Coil drive 57 [STATION 3 Lock Release]
J111-3	Key	
J111-4	BLU-BRN	Coil drive 58 [Left Slingshot]
J111-5	BLU-RED	Coil drive 59 [Right Slingshot]
J111-6	BLU-ORN	Not Used
J111-7	BLU-YEL	Not Used
J111-8	BLU-GRN	Not Used
J111-9	BLU-GRY	Not Used
J111-10	BLU-VIO	Not Used

J112 20-Volt Coil Drives (65-72)

J112-1	VIO	Not Used
J112-2	Key	
J112-3	VIO-BLK	Not Used
J112-4	VIO-BRN	Not Used
J112-5	VIO-RED	Not Used
J112-6	VIO-ORN	Not Used
J112-7	VIO-YEL	Not Used
J112-8	VIO-GRN	Not Used
J112-9	VIO-BLU	Not Used
J112-10	VIO-GRY	Not Used

J113 12-Volt Coil Drives (73-80)

J113-1	Key	
J113-2	LT BLU	+12VDC supply to light below
J113-3	LT BLU-BLK	Coil drive 73 [Shaker Motor]
J113-4	LT BLU-BRN	Not Used
J113-5	LT BLU-RED	Coil drive 75 [Redemption Ticket Motor]
J113-6	LT BLU-ORN	Not Used
J113-7	LT BLU-YEL	Not Used
J113-8	LT BLU-GRN	Not Used
J113-9	LT BLU-GRY	Coil drive 79 [Start Button Light]
J113-10	LT BLU-VIO	Coil drive 80 [Flash Bulb Topper]

J200 Matrixed Switches, Rows

J200-1	WHT-BLK	Row 1 to playfield switches
J200-2	WHT-BRN	Row 2 to playfield switches
J200-3	WHT-RED	Row 3 to playfield switches
J200-4	WHT-ORN	Row 4 to playfield switches
J200-5	WHT-YEL	Row 5 to playfield switches
J200-6	WHT-GRN	Row 6 to playfield switches
J200-7	WHT-BLU	Row 7 to playfield switches
J200-8	WHT-VIO	Row 8 to playfield switches
J200-9	Key	

J201 Matrixed Switches, Columns (1-8)

J201-1	GRN-BLK	Column 1 to playfield switches
J201-2	GRN-BRN	Column 2 to playfield switches
J201-3	GRN-RED	Column 3 to playfield switches
J201-4	GRN-ORN	Column 4 to playfield switches
J201-5	GRN-YEL	Column 5 to playfield switches
J201-6	GRN-GRY	Column 6 to playfield switches
J201-7	GRN-BLU	Column 7 to playfield switches
J201-8	Key	
J201-9	GRN-VIO	Column 8 to playfield switches

J202 Matrixed Switches, Columns (9-16)

J202-1	GRY-BLK	Not Used
J202-2	GRY-BRN	Not Used
J202-3	GRY-RED	Not Used
J202-4	GRY-ORN	Not Used
J202-5	GRY-YEL	Not Used
J202-6	GRY-GRN	Not Used
J202-7	Key	
J202-8	GRY-BLU	Not Used
J202-9	GRY-VIO	Not Used

J203 Serial Communications

J203-1	Not Used
J203-2	Not Used
J203-3	Not Used
J203-4	Not Used
J203-5	Not Used
J203-6	Not Used
J203-7	Not Used

**J601 Dedicated Switches (1-8)**

J601-1	BLK	Dedicated switch common (Ground)
J601-2	BLK-YEL	Not Used
J601-3	BLK-GRN	Not Used
J601-4	BLK-ORN	Not Used
J601-5	BLK-RED	Dedicated switch return 3 [Upper Right Flipper EOS]
J601-6	BLK-BRN	Dedicated switch return 2 [Right Flipper EOS]
J601-7	BLK-GRY	Dedicated switch return 1 [Left Flipper EOS]
J601-8	BLK-BLU	Not Used
J601-9	BLK-VIO	Not Used
J601-10	Key	

**J602 Dedicated Switches (9-16)**

J602-1	BLK	Dedicated switch common (Ground)
J602-2	YEL-GRY	Dedicated switch return 13 [Enter/Menu Button]
J602-3	YEL-GRN	Dedicated switch return 14 [Up/Volume+ Button]
J602-4	YEL-ORN	Dedicated switch return 12 [Right Flipper Switch, Upper]
J602-5	YEL-RED	Dedicated switch return 11 [Right Flipper Switch, Lower]
J602-6	YEL-BRN	Not Used
J602-7	YEL-BLK	Dedicated switch return 9 [Left Flipper Switch]
J602-8	YEL-BLU	Dedicated switch return 15 [Down/Volume- Button]
J602-9	Key	
J602-10	YEL-VIO	Dedicated switch return 16 [Escape/Service Credit Button]

**J603 Dedicated Switches (17-24)**

J603-1	BLK	Dedicated switch common (Ground)
J603-2	BLU-YEL	Dedicated switch return 21 [5th Coin Slot Switch]
J603-3	BLU-GRN	Dedicated switch return 22 [Ticket Mech Notch Switch]
J603-4	BLU-ORN	Dedicated switch return 20 [4th Coin Slot Switch]
J603-5	BLU-RED	Dedicated switch return 19 [Center Dollar Bill Acceptor]
J603-6	BLU-BRN	Dedicated switch return 18 [Right Coin Switch]
J603-7	BLU-BLK	Dedicated switch return 17 [Left Coin Switch]
J603-8	Key	
J603-9	BLU-GRY	Not Used
J603-10	BLU-VIO	Not Used

**J604 Dedicated Switches (25-32)**

J604-1	BLK	Dedicated switch common (Ground)
J604-2	VIO-YEL	Not Used
J604-3	VIO-GRN	Dedicated switch return 30 [Headphone Panel Volume Down]
J604-4	VIO-ORN	Not Used

J604-5	VIO-RED	Dedicated switch return 27 [Plumb Bob Tilt]
J604-6	VIO-BRN	Dedicated switch return 26 [Coin Door Open]
J604-7	Key	
J604-8	VIO-BLK	Dedicated switch return 25 [Start Button]
J604-9	VIO-BLU	Dedicated switch return 31 [Headphone Panel Volume Up]
J604-10	VIO-GRY	Dedicated switch return 32 [Headphone Jack Sense]

**J701 AC Power Input (High)**

J701-1	RED	49VAC from transformer (across RED lines)
J701-2	RED	49VAC from transformer (across RED lines)
J701-3	BLU	49VAC from transformer (across BLU lines)
J701-4	BLU	49VAC from transformer (across BLU lines)
J701-5	GRN	Chassis Ground
J701-6	GRN	Chassis Ground

**J702 AC Power Input (Low)**

J702-1	YEL	18VAC from transformer (across YEL lines)
J702-2	YEL	18VAC from transformer (across YEL lines)
J702-3	GRY	10VAC from transformer (across GRY lines)
J702-4	GRY	10VAC from transformer (across GRY lines)

**J800 CPU Communication**

Not Used (Not Populated)

**J802 RGB LED Control**

Not Used (Not Populated)

**J804 Flash Programming Access**

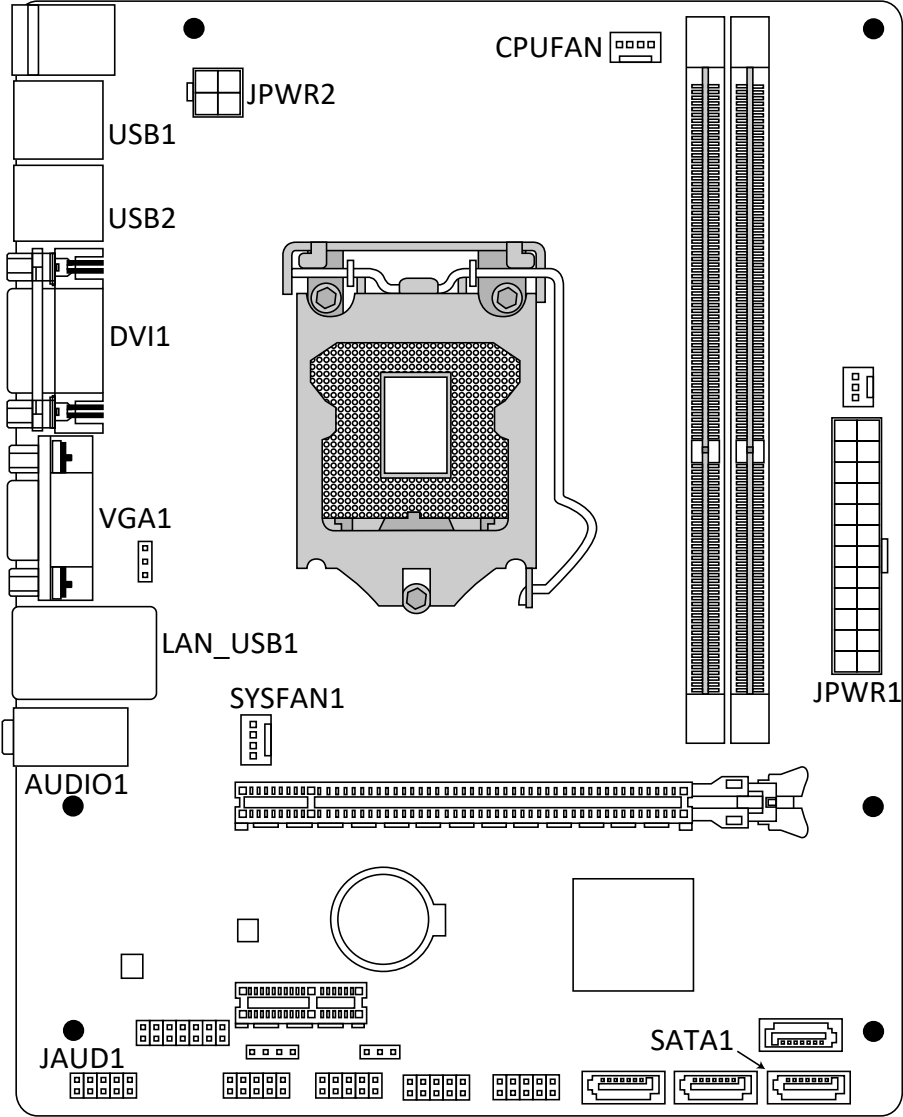
Not Used (Not Populated)

**JUSB CPU Communication (Switch Monitoring/Device Control)**

Mini USB cable to CPU Board USB connector

**PWR1 DC Power Input**

PWR1-1	YEL	+12VDC from Primary ATX Pwr Supply
PWR1-2	BLK	Ground from Primary ATX Pwr Supply
PWR1-3	BLK	Ground from Primary ATX Pwr Supply
PWR1-4	RED	+5VDC from Primary ATX Pwr Supply



**CPU Board, 15-000000-01**  
Connector Pin-outs

**JPWR2 DC Power Input**

JPWR2-1	BLK	Ground from Primary ATX Pwr Supply
JPWR2-2	BLK	Ground jumpered from pin 1
JPWR2-3	YEL-BLK	+12VDC from Primary ATX Pwr Supply
JPWR2-4	YEL-BLK	+12VDC jumpered from pin 3

**CPUFAN CPU Fan Power**

Primary connection for CPU fan (on CPU Board)

**JPWR1 DC Power Input**

JPWR1-1	ORN	+3.3VDC from Primary ATX Pwr Supply
JPWR1-2	ORN	+3.3VDC from Primary ATX Pwr Supply
JPWR1-3	BLK	Ground from Primary ATX Pwr Supply
JPWR1-4	RED	+5VDC from Primary ATX Pwr Supply
JPWR1-5	BLK	Ground from Primary ATX Pwr Supply
JPWR1-6	RED	+5VDC from Primary ATX Pwr Supply
JPWR1-7	BLK	Ground from Primary ATX Pwr Supply
JPWR1-8	GRY	Power OK signal from Primary ATX Pwr Supply
JPWR1-9	VIO	+5VDC Standby from Primary ATX Pwr Supply
JPWR1-10	YEL	+12VDC from Primary ATX Pwr Supply
JPWR1-11	ORN	+3.3VDC from Primary ATX Pwr Supply
JPWR1-12	BLU	-12VDC from Primary ATX Pwr Supply
JPWR1-13	BLK	Ground from Primary ATX Pwr Supply
JPWR1-14	GRN	Power Supply ON signal from Primary ATX Pwr Supply
JPWR1-15	BLK	Ground from Primary ATX Pwr Supply
JPWR1-16	BLK	Ground from Primary ATX Pwr Supply
JPWR1-17	BLK	Ground from Primary ATX Pwr Supply
JPWR1-18	Not Used	
JPWR1-19	RED	+5VDC from Primary ATX Pwr Supply
JPWR1-20	RED	+5VDC from Primary ATX Pwr Supply

**SATA1 SATA Data Input/Output**

SATA cable to solid state hard drive

**SYSFAN1 System Fan Power**

SYSFAN1-1	BLK	Ground to backbox fan
SYSFAN1-2	RED	+12VDC to backbox fan
SYSFAN1-3	Not Used	
SYSFAN1-4	Not Used	

**JAUD1 Audio Output**

JAUD1-1	Not Used	
JAUD1-2	BLK-BRN	Audio ground to Cabinet Headphone Board, J101-2
JAUD1-3	Not Used	
JAUD1-4	Not Used	
JAUD1-5	BLK-YEL	Right audio channel to Cabinet Headphone Board, J101-5
JAUD1-6	Not Used	
JAUD1-7	Not Used	
JAUD1-8	KEY	
JAUD1-9	BLK-VIO	Left audio channel to Cabinet Headphone Board, J101-9
JAUD1-10	Not Used	

**AUDIO1 Audio Output**

3.5mm audio cable to Sound Amplifier Board, J2

**VGA1 Video Output**

VGA cable to Smartphone LCD monitor

**DVI1 Video Output**

DVI cable to LCD monitor

**USB1 USB 2.0 Ports (2)**

Mini USB cable to BAG Controller Board, J101  
USB cable to camera (inside backbox)

**USB2 USB 3.0 Ports (2)**

USB extension cable to front of cabinet (inside coin door)

**LAN\_USB1 Ethernet Connection (1) & 3.0 Ports (2)**

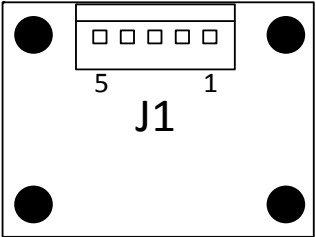
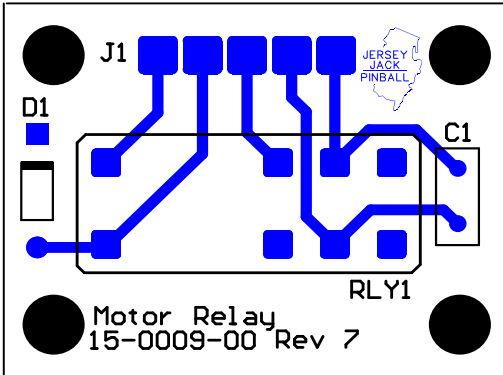
Ethernet Connection: Not Used  
USB1: Dialed In Game Security Dongle  
Mini USB cable to I/O Board, JUSB

**Auxiliary Video Card Output**

VGA cable to Theater LCD monitor

Motor Relay Board  
15-000009-00

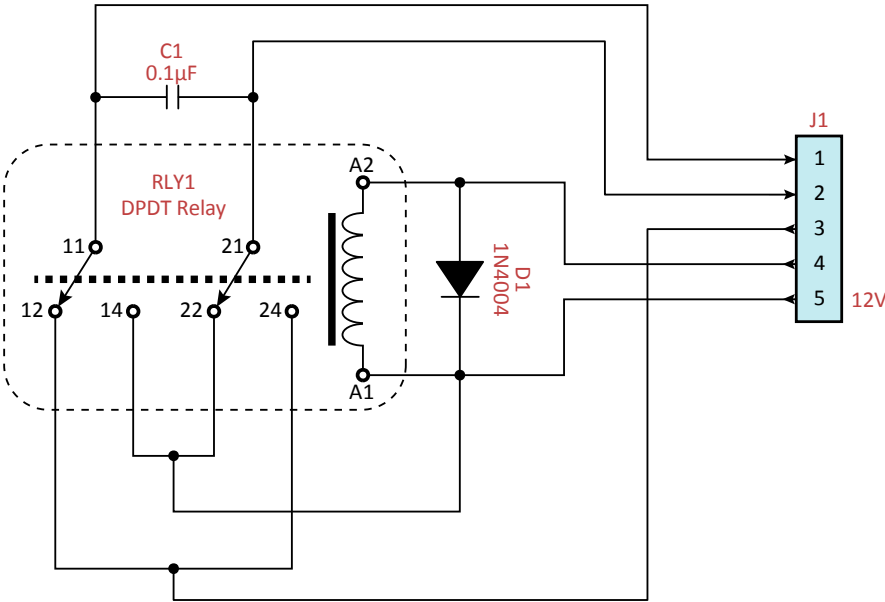
Component(s)	Part Number	Description
C1	101-104K-100	Capacitor, MLCC, Leaded, 0.1μF, 100V, 10%
D1	110-0002-0T	Diode, 1N4004, 400V, 1A
RLY1	160-0000-0T	Relay, PCB, DPDT, 12VDC, 8A
J1	31-2505-05	Header, Male, 5-Pin, 3.96mm



Motor Relay Board, 15-000009-00  
Connector Pin-outs

<i>J1 Moving Target Motor Control</i>		
J1-1	RED	To Moving Target Motor
J1-2	BLK	To Moving Target Motor
J1-3	YEL-BLK	Moving Target Motor drive from I/O Board, J109-2
J1-4	YEL-BRN	Moving Target Relay drive from I/O Board, J109-3
J1-5	YEL	+12VDC from I/O Board, J109-1

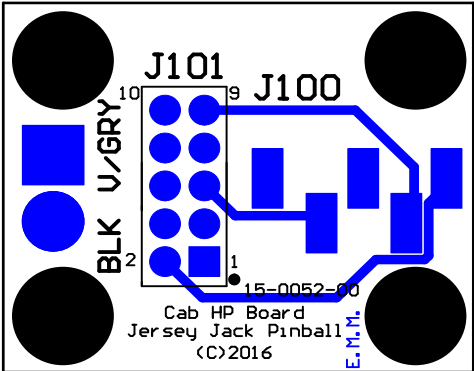
Motor Relay Board  
15-000009-00



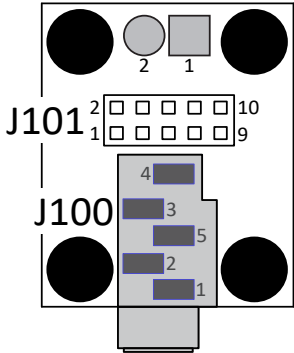
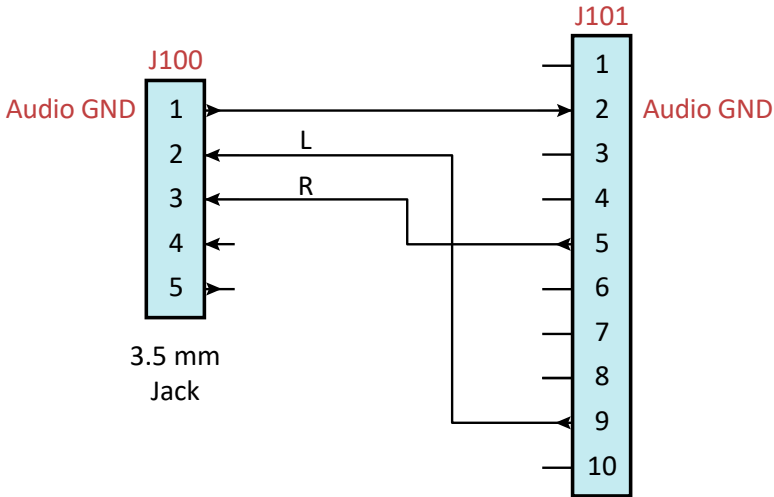


# Cabinet Headphone Board 15-000052-00

Component(s)	Part Number	Description
J100	30-002506-20	Jack Header, 3.5mm, Rt Angle, Black
J101	31-002508-10	Header, Male, 10-pin, 2 Rows, 2.54mm



# Cabinet Headphone Board 15-000052-00



## Cabinet Headphone Board, 15-000052-00 Connector Pin-outs

**J100 Headphone Jack**  
3.5mm headphone/audio cable

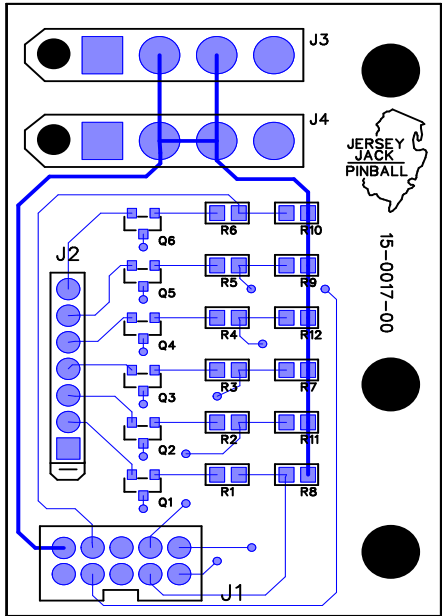
<b>J101 CPU Audio Input</b>		
J101-1	Not Used	
J101-2	BLK-BRN	Audio ground from CPU Board, JAUD1-2
J101-3	Not Used	
J101-4	Not Used	
J101-5	BLK-YEL	Right audio channel from CPU Board, JAUD1-5
J101-6	Not Used	
J101-7	Not Used	
J101-8	Not Used	
J101-9	BLK-VIO	Left audio channel from CPU Board, JAUD1-9
J101-10	Not Used	

<b>Soldered to board</b>		
pin 1	VIO-GRY	Dedicated switch return 32 [Headphone Jack Sense], I/O Board, J604-10
pin 2	BLK	Dedicated switch common (Ground), I/O Board, J604-1

# European Coin Door Board

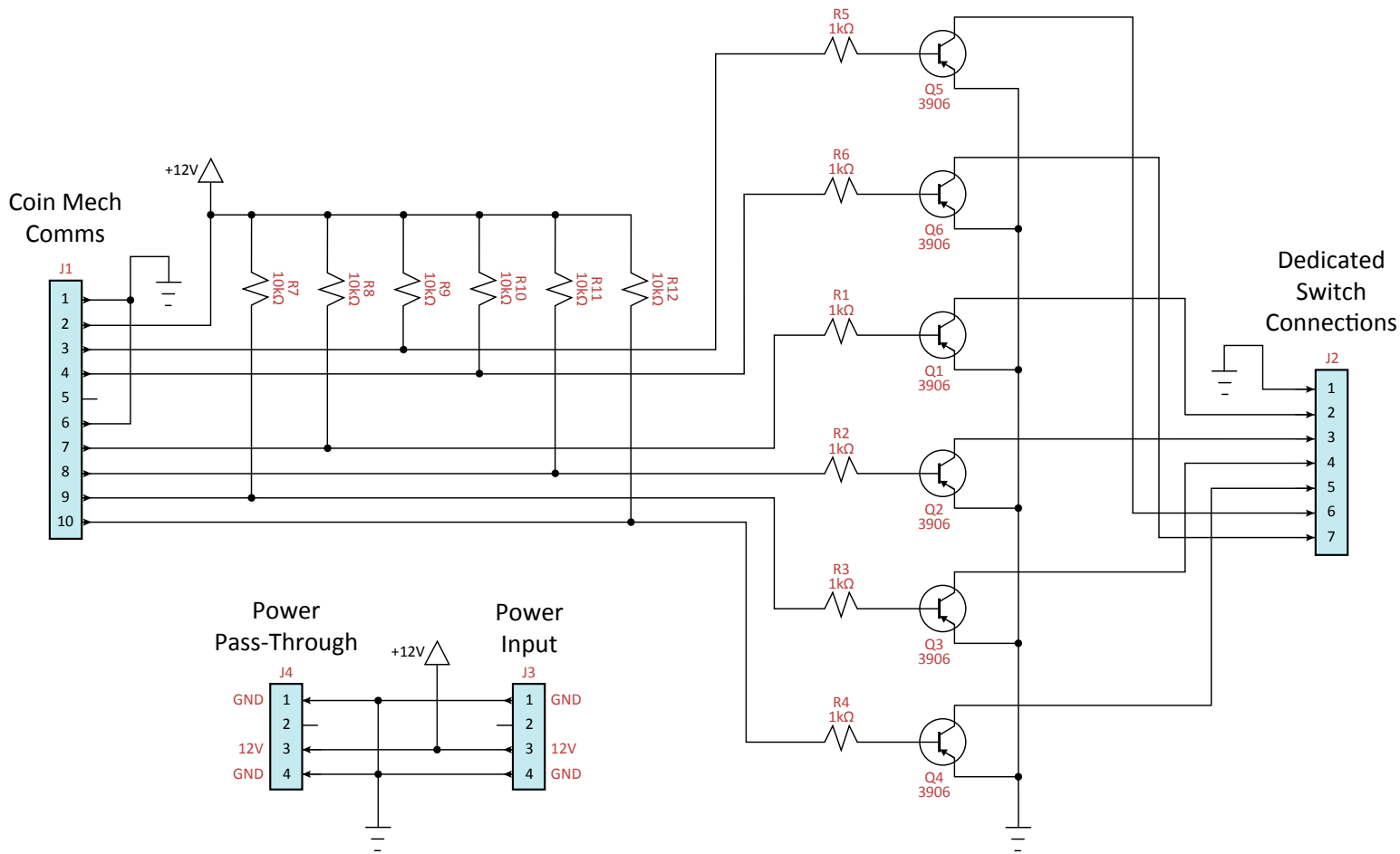
## 15-000017-00

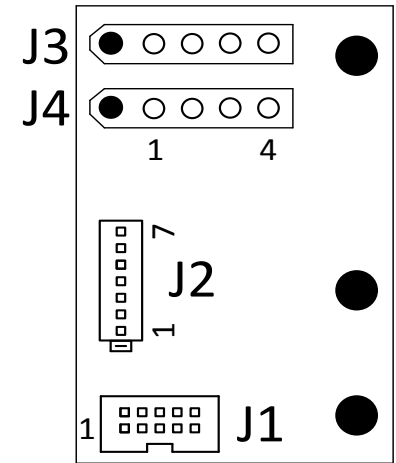
Component(s)	Part Number	Description
Q1-Q6	131-0001-0S	Transistor, 3906, SOT-23 SMT, PNP
R1-R6	120-1K00-124	Resistor, 0805 SMT, 1kΩ, 0.125W, 5%
R7-R12	120-10K0-124	Resistor, 0805 SMT, 10kΩ, 0.125W, 5%
J1	31-2513-10	Connector Header, Male, 10-pin, 2 Rows, 2.54mm
J2	31-2504-07	Header, Male, 7-pin, 2.54mm
J3, J4	31-2512-04	Connector Header, Male, 4-pin, 5.03mm



# European Coin Door Board

## 15-000017-00





European Coin Door Board  
15-000017-00  
Connector Pin-outs

**J1 Coin Mech Comms**

10-pin Ribbon cable		
J1-1	->	
J1-2	->	
J1-3	->	
J1-4	->	Communications
J1-5	->	with coin
J1-6	->	mechanisms
J1-7	->	in coin door
J1-8	->	
J1-9	->	
J1-10	->	

**J2 Dedicated Switch Connections**

J2-1	BLK	Dedicated switch common (Ground), I/O Board, J603-1
J2-2	BLU-BLK	Dedicated switch return 17 [Left Coin Switch], I/O Board, J603-7
J2-3	BLU-BRN	Dedicated switch return 18 [Right Coin Switch], I/O Board, J603-6
J2-4	BLU-RED	Dedicated switch return 19 [Center Dollar Bill Acceptor], I/O Board, J603-5
J2-5	BLU-ORN	Dedicated switch return 20 [4th Coin Slot Switch], I/O Board, J603-4
J2-6	BLU-YEL	Dedicated switch return 21 [5th Coin Slot Switch], I/O Board, J603-2
J2-7	BLU-GRN	Dedicated switch return 22 [Ticket Mech Notch Switch], I/O Board, J603-3

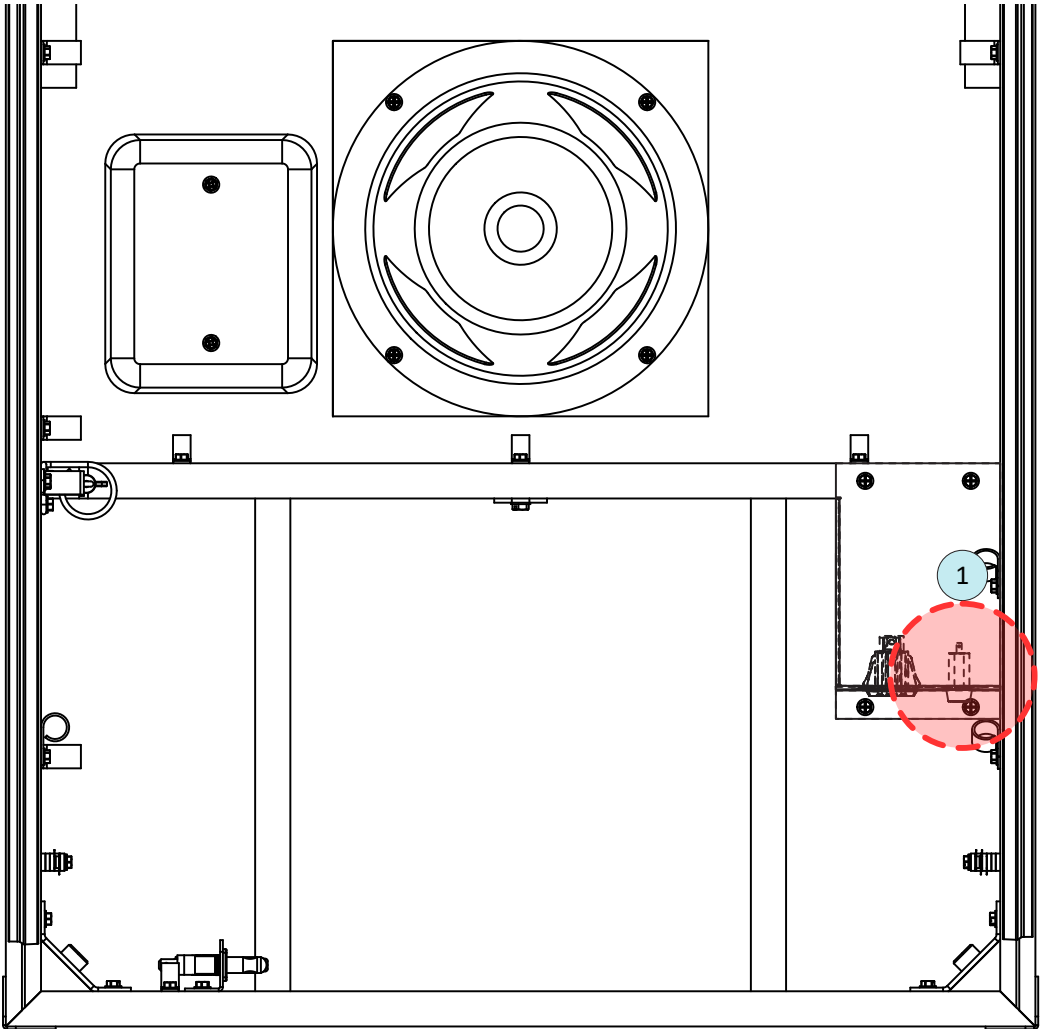
**J3 DC Power Input**

J3-1	BLK	Ground from Primary ATX Pwr Supply
J3-2	Not Used	
J3-3	YEL	+12VDC from Primary ATX Pwr Supply
J3-4	BLK	Ground from Primary ATX Pwr Supply

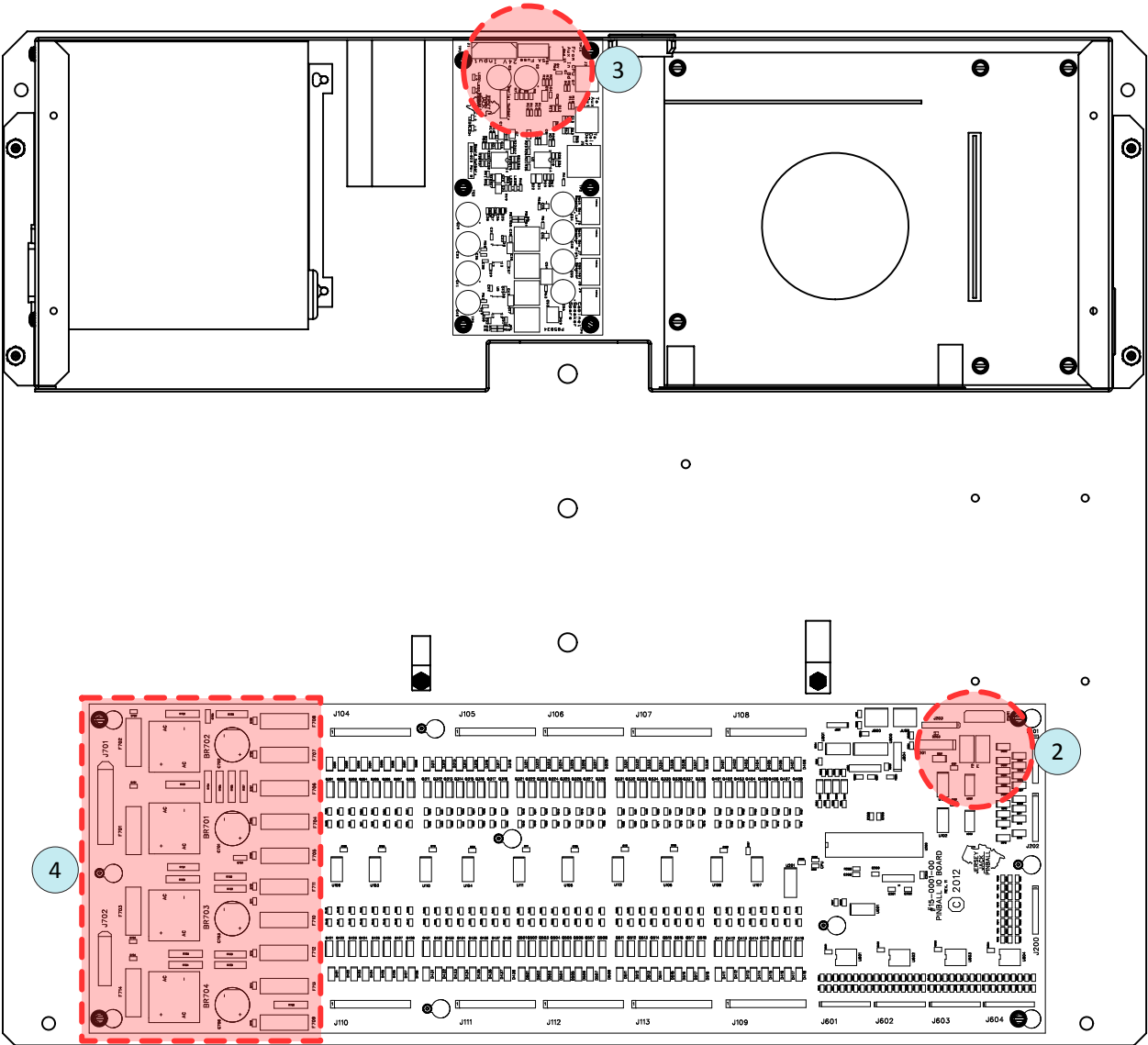
**J4 Power Pass-Through**

J4-1	BLK	Ground to coin door
J4-2	Not Used	
J4-3	YEL	+12VDC to coin door
J4-4	BLK	Ground to coin door

# Fuse Locations



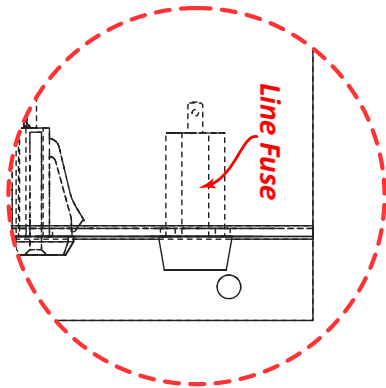
In Bottom of Cabinet



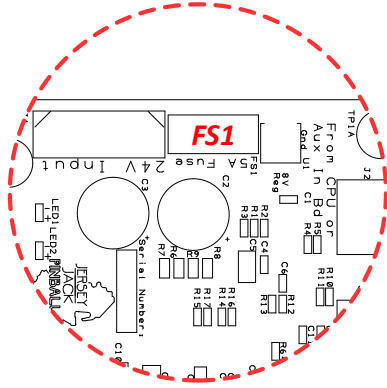
In Backbox

# Fuse Information

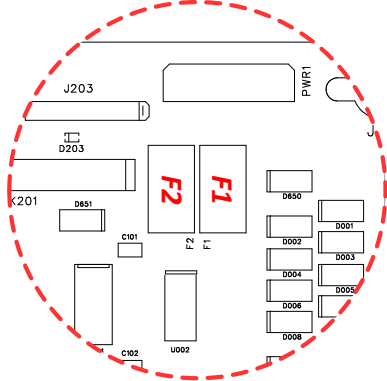
## 1 Power Box Assembly



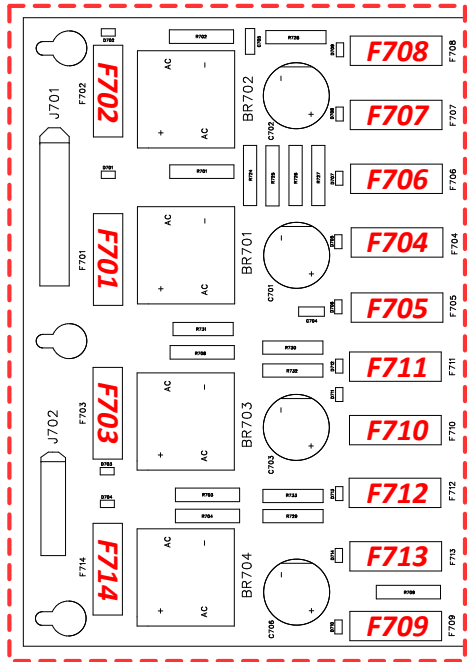
## 3 Sound Amplifier Board



## 2 I/O Board



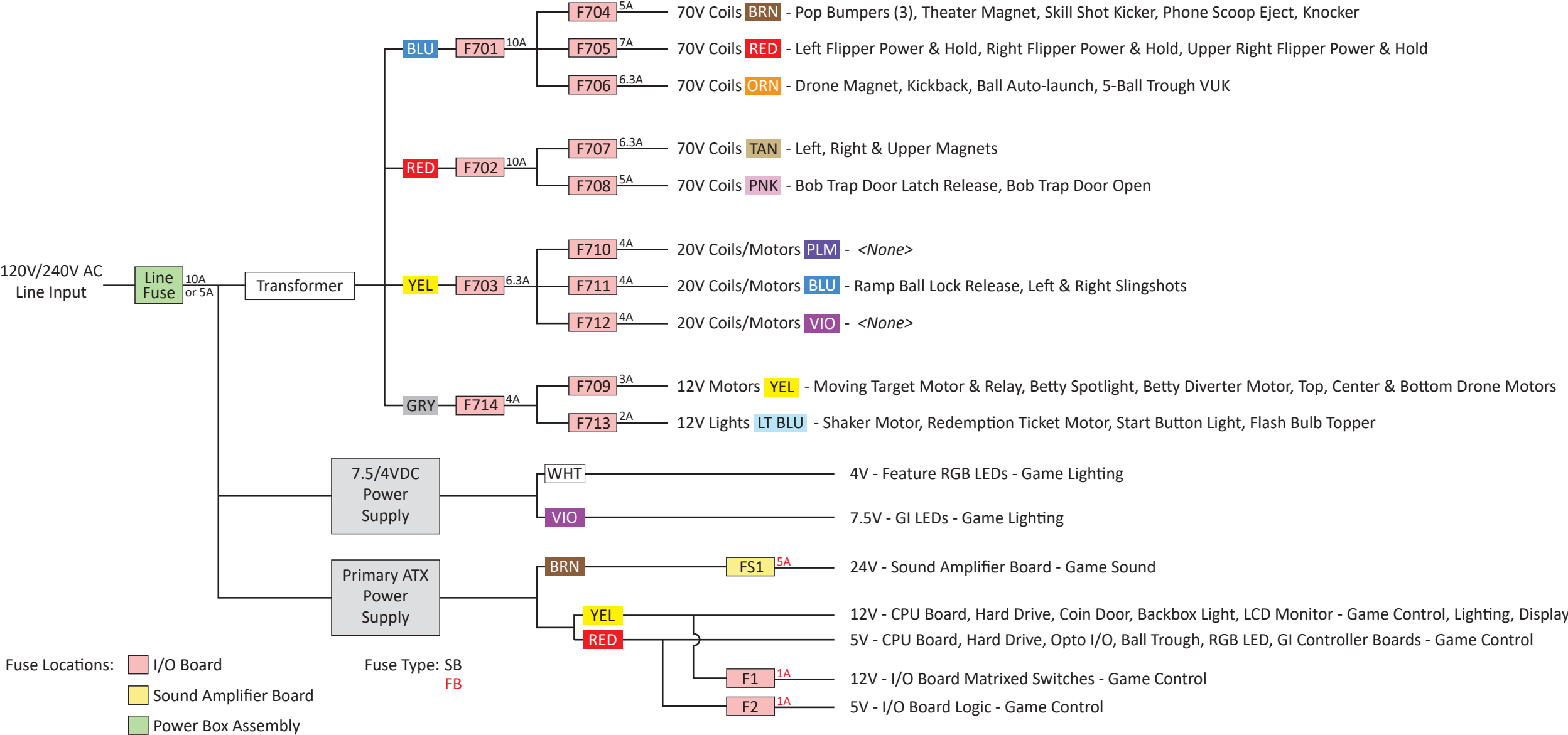
## 4 I/O Board



Fuse Identifier(s)	Description	Part Number
F701, F702	Fuse, Time Delay, 10A, 250V, 5mm x 20mm	170-000110-SM
F703, F706, F707	Fuse, Time Delay, 6.3A, 250V, 5mm x 20mm	170-000163-SM
F705	Fuse, Time Delay, 7A, 250V, 5mm x 20mm	170-000107-SM
F704, F708	Fuse, Time Delay, 5A, 250V, 5mm x 20mm	170-000105-SM
F710, F711, F712, F714	Fuse, Time Delay, 4A, 250V, 5mm x 20mm	170-000104-SM
F709	Fuse, Time Delay, 3A, 250V, 5mm x 20mm	170-000103-SM
F713	Fuse, Time Delay, 2A, 250V, 5mm x 20mm	170-000102-SM

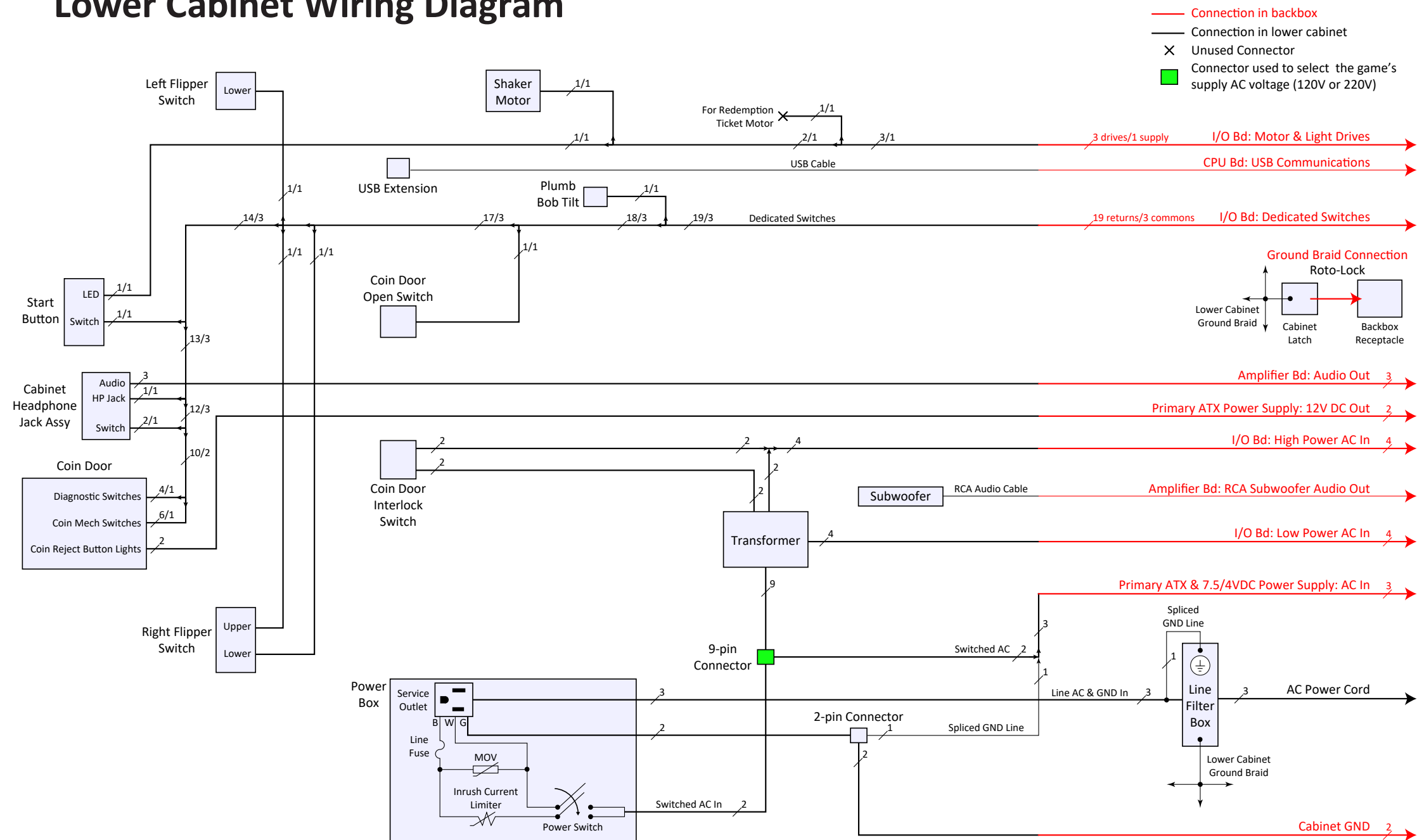
Fuse Identifier(s)	Description	Part Number
F1, F2	Fuse, Fast-Acting, 1A, 32V, Mini Blade	170-003201-FB
FS1	Fuse, Fast-Acting, 5A, 32V, Mini Blade	170-003205-SB
125V Line Fuse	Fuse, Slow Blow, 10A, 125V, 0.25" x 1.25", 3AG	170-000110-SR
250V Line Fuse	Fuse, Slow Blow, 5A, 250V, 0.25" x 1.25", 3AG	170-000205-SR

# Fused Power Stream

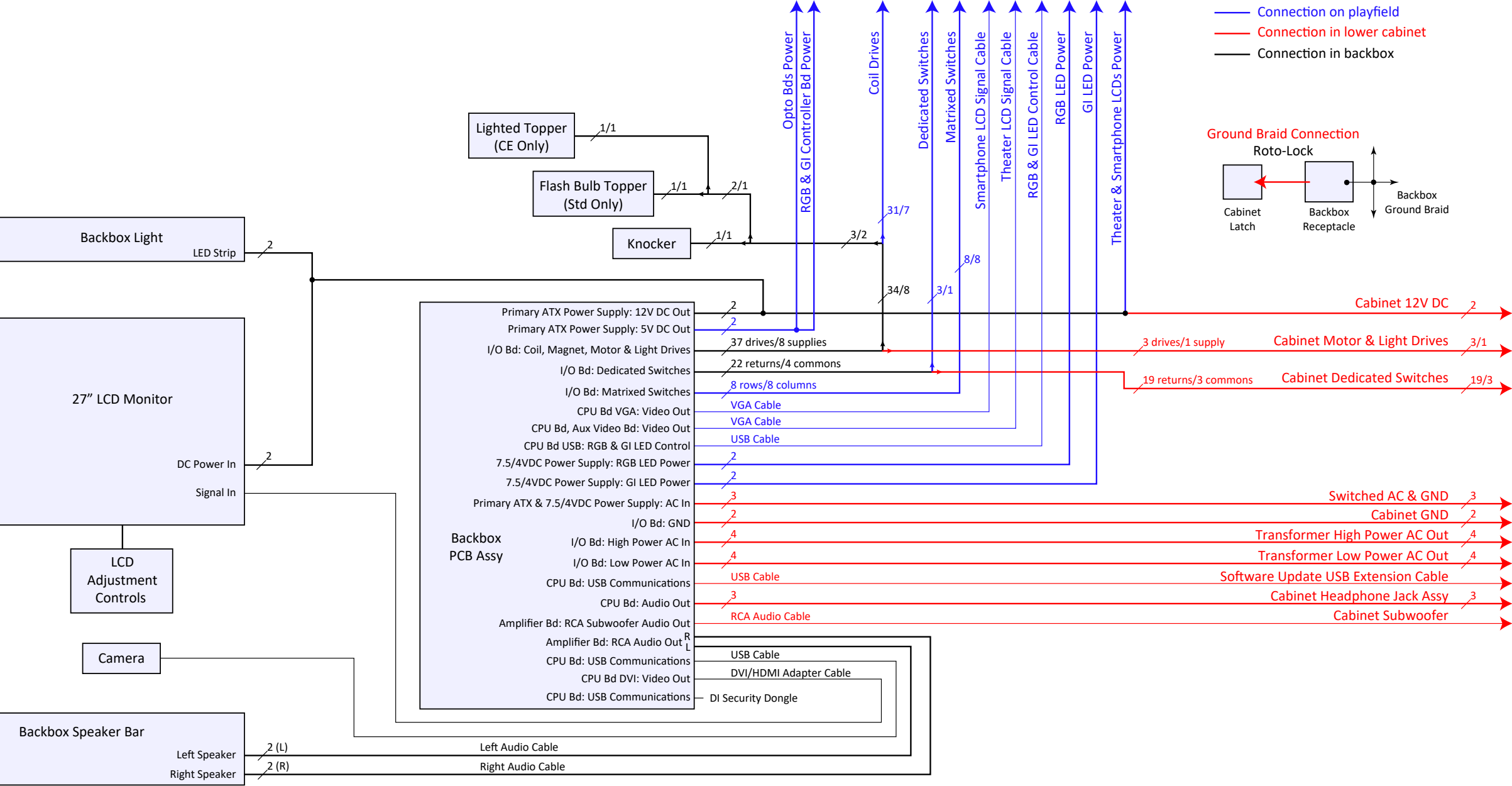




# Lower Cabinet Wiring Diagram

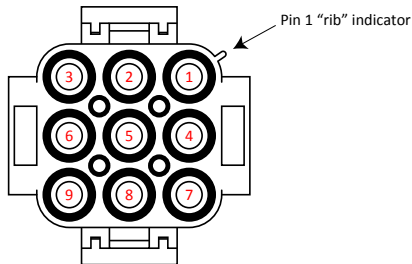


# Backbox Wiring Diagram

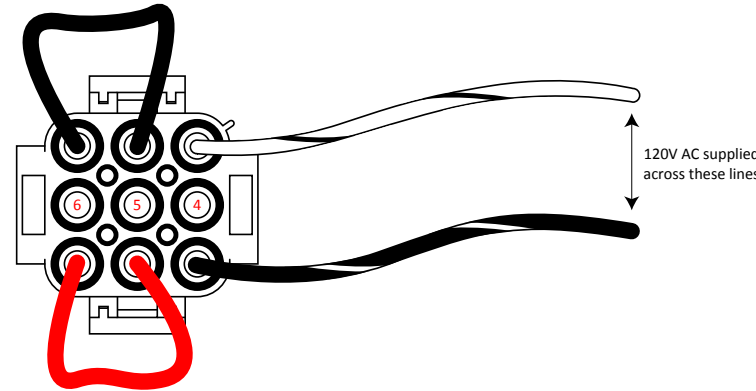


# Supply Voltage Conversion

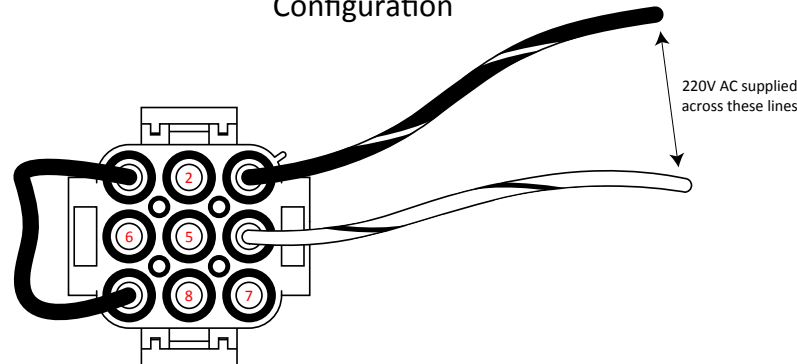
Voltage Conversion  
Connector Pin-out



120V AC Input  
Configuration



220V AC Input  
Configuration



If you need to convert your game to a different supply voltage than it was wired for at the factory, locate the 9-pin connector at the input of the transformer, in the bottom of the lower cabinet (shown opposite and in the green box on page D-115).

**Power the game down** and disconnect the 9-pin connector (it has locking tabs on each side). Looking at the back of the jumpered connector (the end with the wires protruding), locate the pin 1 “rib” indicator and orient the connector so that it is in the upper right hand corner, as shown opposite. The red numbers show pin numbers for the entire connector.

Look at the illustration for the desired configuration and compare it to the current configuration. Using a 0.084” pin extractor, remove all pins that require repositioning by pushing them out of the back of the connector, from the front. You can reuse existing wires as long as they were not damaged during the removal process. Fashion new, short jumper wires, as needed.

Using the appropriate illustration for reference, insert the jumper pins all the way into the connector, in the proper positions, from the back side, until they lock in place.

For a 120V supply voltage, connect the AC inputs across pins 1 & 7. Next, jumper pins 2 & 3 together with a short piece of black wire. Lastly, jumper pins 8 & 9 together with a short piece of orange wire.

For a 220V supply voltage, connect the AC inputs across pins 1 & 4. Then jumper pins 3 & 9 together with a short piece of black wire.

**Note:** Your Dialed In game makes use of switching, modular power supplies for the RGB LED & GI lighting systems (4V and 7.5V), the sound amplifier board (24V), the CPU board (5V & 12V ATX supply) and/or other game functions. These switching power supplies have voltage selection slide switches on their exterior panels that must be in the proper position (120V or 220V) before applying power to the game.





# Section E

## Game Service & Troubleshooting



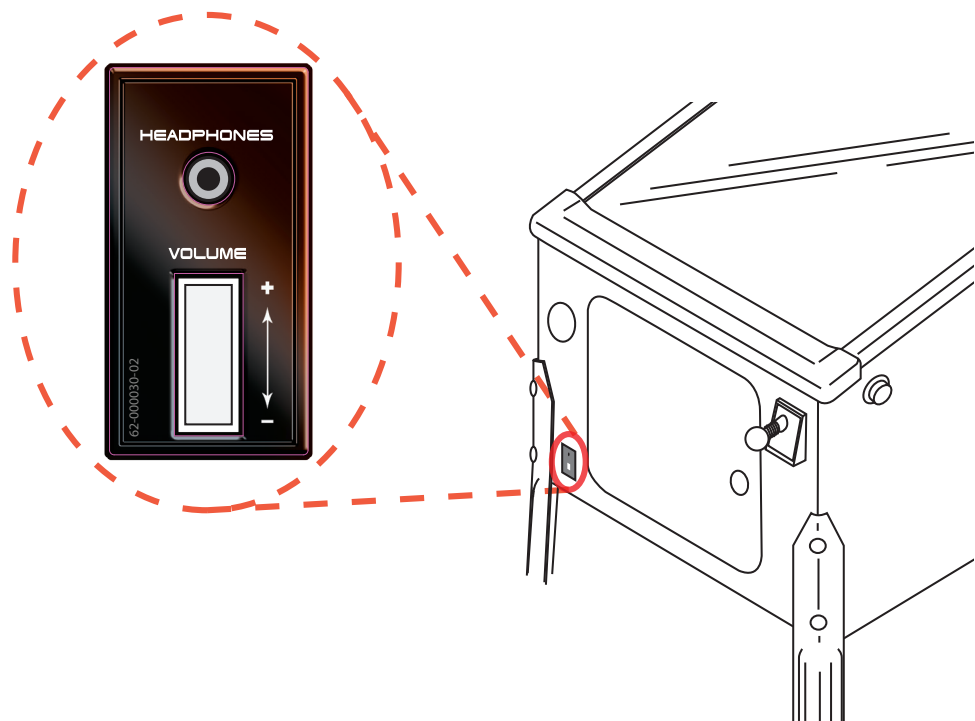


Figure E1. Cabinet sound controls.

## E.1 Cabinet Sound Controls

The Dialed In sound system features a stereo headphone jack on the front of the cabinet, along with a volume control (circled in figure E1). To adjust the headphone levels, use the volume up/down rocker switch.

The cabinet rocker switch may also be used to adjust the overall volume of the game (through its speakers), provided the appropriate setting is enabled in the System Settings menu (see **System Settings** in Section B of this manual).

### **WARNING:**

Jersey Jack Pinball® encourages you to use the provided headphone jack responsibly. Different ear buds or headphones may produce different sound levels. **ALWAYS** begin with a low output level when connecting headphones and gradually increase the volume to a comfortable level. Pay close attention to and set strict limits for how long you expose your ears to high volume levels through headphones. **DO NOT** turn up the headphone volume on your Dialed In game in an attempt to block out noisy surroundings. Prolonged exposure to high volume levels can cause irreversible damage to your hearing! If you experience ringing in your ears or have difficulty understanding speech, stop listening and have your hearing tested immediately.



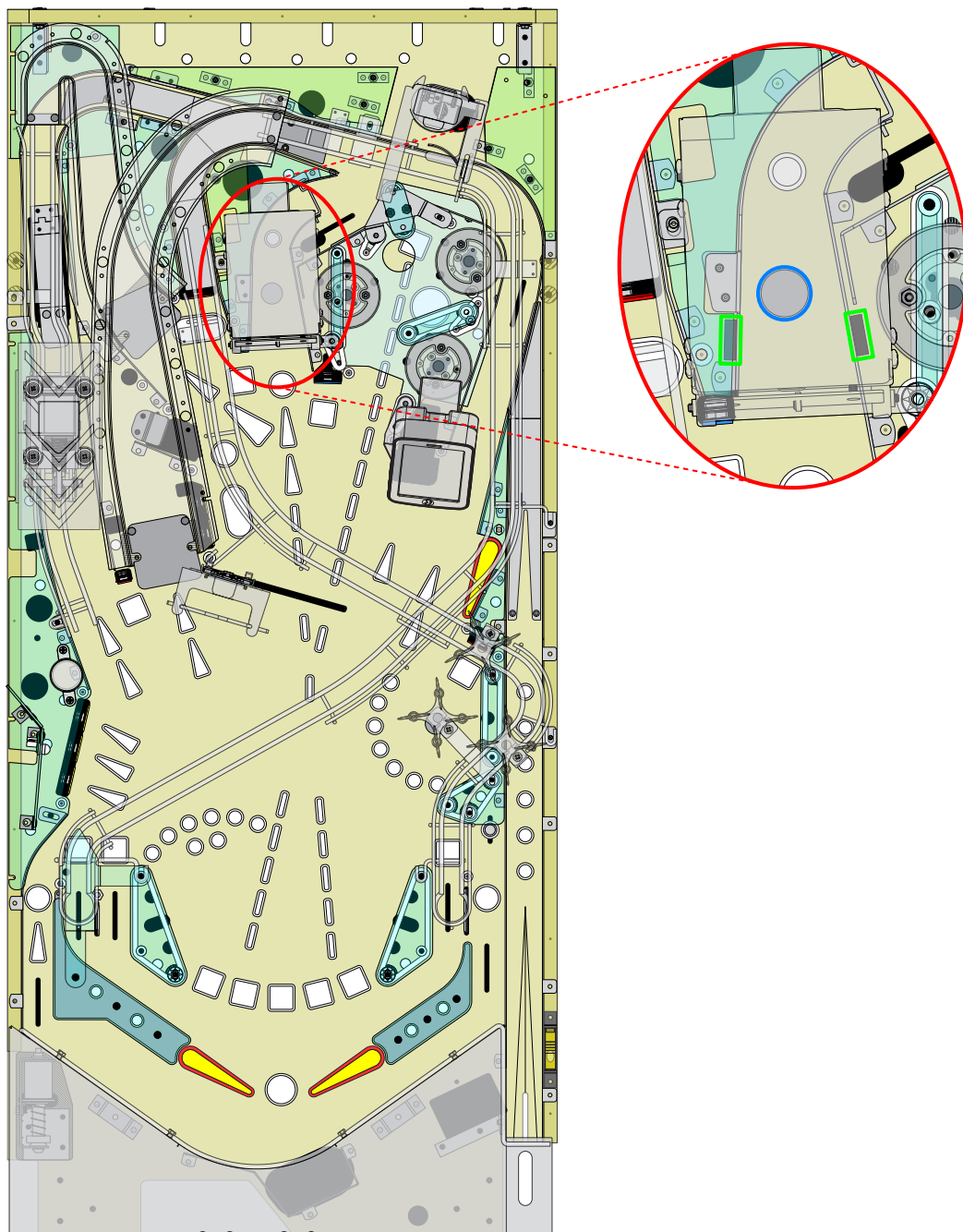


Figure E2. Dialed In Quantum Theater Magnet.

## E.2 The Quantum Theater Magnet

One of the primary elements of the Dialed In playfield is the **Quantum Theater** (in the red oval in Figure E2, opposite). It features a 3-dimensional display used to project virtual targets/objects and a magnet to interact with the ball, accordingly, as theater shots are made.

The theater magnet is attached to the underside of the playfield, with its pole protruding up through it (blue circle in the detail illustration, opposite). The magnet is triggered via a pair of optos, mounted to the back sides of the flatrails on either side of the theater shot opening (green rectangles in the detail illustration, opposite). There is a Device Test (see pg B-18) and a Game Setting (pg B-31) for the **Theater Magnet** in the Dialed In menu system.

The **Theater Magnet** will catch and release the ball when virtual Train Bash Target, Captive Ball or Kilowatt Drop Target shots are made. It will also catch and release the ball with the first theater shot in the Volcano Disaster Mode and with every shot in the EMP Disaster Mode. It will catch and *hold* the ball for the beginning of Showdown.

The **Theater Magnet** will catch the ball and attempt to toss it back up, through the theater, when a Drone Mystery box is collected. If something else is being displayed in the theater (such as EMP Mode images), an active Drone Mystery box will not be shown. However, it will still be collected with the next shot to the theater - and the ball will be caught and tossed back up, through the theater, as a result.

If your theater shot does not score and/or your theater magnet never catches the ball, one of the black plastic optos has probably come loose from its mounting hole in one of the flatrails (most likely, the opto on the right side, next to the pop bumpers). Snap the tabs on the opto housing back into the mounting hole in the flatrail. If one of the tabs is broken, apply a small dab of silicone to the housing when you reattach it and allow the silicone to set up overnight before playing the game again.

**Note:** Game software monitors the use of the **Theater Magnet** and administers a strict two-second cool-down period after the magnet is triggered, before allowing it to be triggered again.

# E.3 The Dialed In Lighting System

## Theory of Operation

The Dialed In lighting system can be divided into three major subcomponents: communications/control, general illumination (GI) and feature lighting. One of the primary attributes of the system is parallel control of all lighting in the game; issues with individual (or a small group of) LEDs will not affect large areas of the playfield. Modularity and flexibility are also important system characteristics.

The communications/control hub is the Bus, Accelerometer and GI (BAG) board; it is mounted, vertically, under the upper left area of the playfield (circled in red in figure E3). An on-board microcontroller receives data/commands over a USB connection to the CPU board (J101). Controls are then sent out, over an inter-integrated circuit (I2C) bus, to the game's light boards - and more, if needed. Communicating over an I2C bus, between printed circuit boards (J102, J103), adds a great deal of flexibility to the system. Simultaneous control of a wide variety of device types is now possible.

GI and feature lighting are independent circuits in Dialed In. GI functions (lighting under playfield plastics, primarily) are accomplished with single color (cool white) LED boards, whereas RGB LED boards are used for feature lighting (lighting behind playfield inserts, primarily). Since we can control the intensity of the GI board LEDs, they can also be used for accent lighting (under the lasered cityscape/skyline plastic in Dialed In) and as flashers (in Dialed In's back panel).

The control circuitry for GI lighting resides on the BAG board. 7.5VDC is also run through the board to provide power to all of the GI LED boards around the playfield (above and below). This 7.5VDC is supplied by the 7.5/4VDC Power Supply, located inside the backbox PCBs EMI shield (item 10, pg C-46 of this manual). The BAG board can control up to 72 GI LEDs, 8 through each of 9 driver connectors (J105-J113).

A pair of wires runs to each GI LED board. One wire (solid GRY) supplies power to the LED, the other (GRY with a stripe) is the control/return line from the LED; this line is used to vary the LED's intensity. The pairs of wires are bundled together into cable assemblies (pg C-94). The striped wires are color coded to quickly identify which pins each LED connects to at its 16-pin BAG board connector. The first LED in each cable has a drive wire with a BLK stripe, the second has a BRN-striped wire, the third, a RED-striped wire and so on, through the resistor color code (BLK, BRN, RED, ORN, YEL, GRN, BLU, VIO). Color code references for GI wiring are included in GI wiring PF diagrams & tables (pgs C-90 to C-93), BAG board schematics (pg D-79) and in BAG board connector pin-out listings (pg D-80).

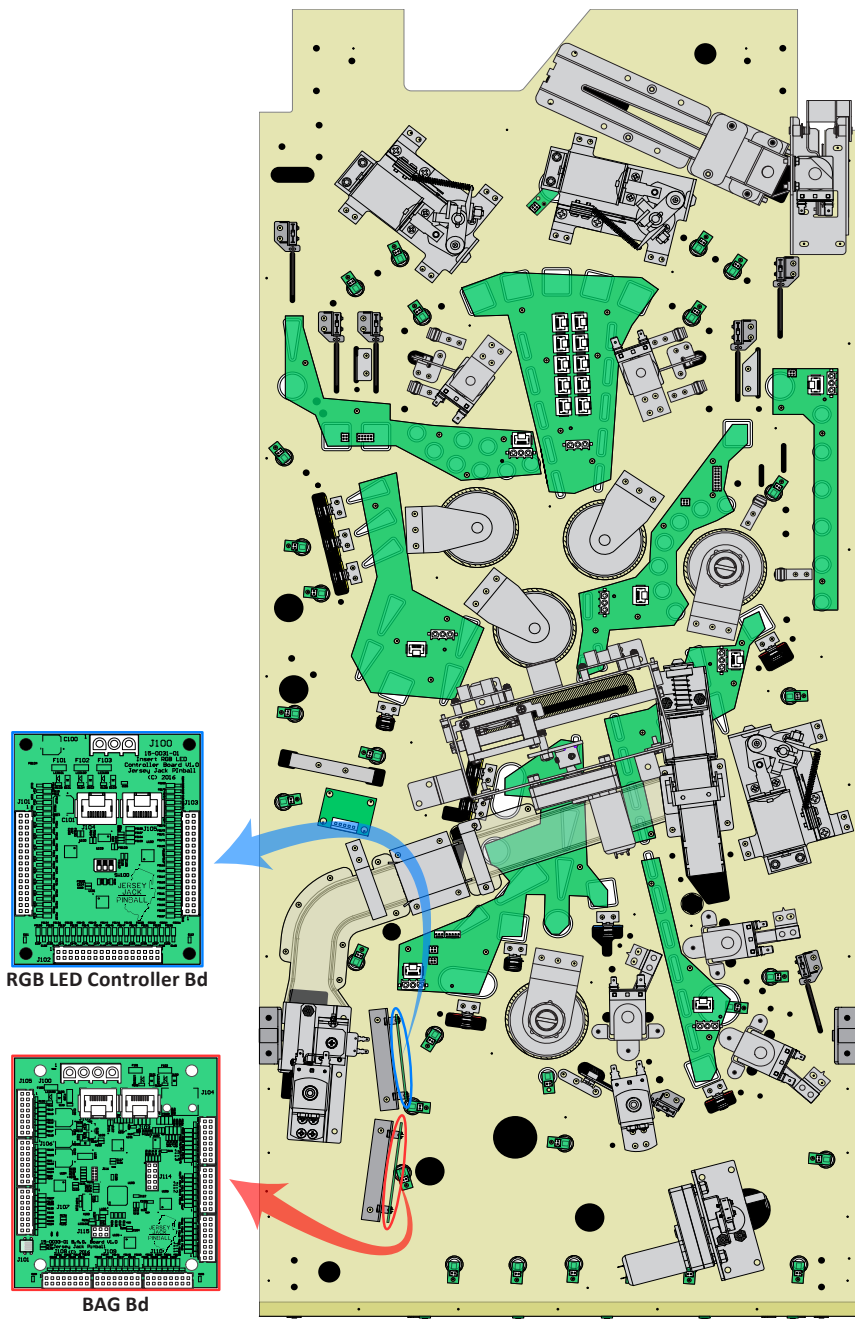


Figure E3. Dialed In lighting system controller boards.

In Dialed In, the eight large RGB LED PCBs (under the playfield), the Smartphone RGB LED PCB (inside the Smartphone) and an RGB LED Controller board (circled in blue in figure E3) are used to control the game's feature lighting. 4VDC is run through these boards to provide power to all of the RGB LED boards around the playfield (above and below). This 4VDC is supplied by the 7.5/4VDC Power Supply, located inside the backbox PCBs EMI shield (item 2, pg C-46 of this manual). Each RGB LED Controller board can control up to 24 RGB LEDs, 8 through each of 3 driver connectors (**J101-J103**). Up to 8 individually addressable (0 through 7) RGB LED Controller boards can be used in a game. Controller board addresses are set using the 3-bank dip switch labeled **SW100**. In Dialed In, the RGB LED Controller board is set to address 0 (**SW100** -> 000).

Communication/control signals are distributed, through CAT5 ethernet cables, between the BAG board (**J103**), the eight large RGB LED PCBs (**J101-J110, J201, J301, J401, J501, J601, J701 & J801**), the Smartphone RGB LED PCB (**J101**) and the RGB LED Controller board (**J104, J105**). Signals from the BAG board are supplied through the RGB LED Controller board, to the first large RGB LED PCB, then out (in parallel) to all of the remaining large RGB LED PCBs (including the Smartphone RGB LED PCB). Several of the large RGB LED PCBs, in turn, control groups of individual, "outlier" RGB LEDs around the playfield. An unplugged or damaged ethernet cable will interrupt control to any RGB LED Controller boards and/or RGB LEDs downstream.

RGB LEDs are essentially 3 LEDs in one package: one red, one green and one blue. As such, four wires are run to each RGB LED in the game. One wire supplies power to the LED package, the other three are individual intensity control/return lines - one for each LED color: **red, green, blue**. The quartets of wires are bundled together into cable assemblies (pg C-88). The wires are color coded to quickly identify which pins each RGB LED connects to at its 50-pin RGB LED Controller board connector (or its large RGB LED PCB connector). A base color is used for each set of four wires. The power wire for each quartet is the base color, solid (no stripe); the control/return wire for each LED color is the base wire color with a stripe in that color. For example, if the base color is YEL, the power wire will be solid YEL. The wires controlling red, green and blue intensities will be YEL with a RED stripe, YEL with a GRN stripe and YEL with a BLU stripe, respectively. If the stripe color would match the wire's base color, a GRY stripe is used for that control wire instead.

The first RGB LED in each cable has a wire base color of BLK, the second has a base color of BRN, the third, a base color of RED and so on, through the resistor color code (BLK, BRN, RED, ORN, YEL, GRN, BLU, VIO). Color code references for feature lighting wiring are included in feature lighting PF diagrams & tables (pgs C-80 to C-87), RGB LED Controller board schematics (pg D-72) and in RGB LED Controller board connector pin-out listings (pg D-73).

To set the radiant color for an RGB LED, we manipulate the intensity of each LED component, **red, green, blue**. For example, equal intensities of red and blue (along with no intensity of green) will result in a particular intensity of violet. Equal intensities of all three colors will create a certain intensity of cool white. If the LEDs are run at maximum intensity, they will produce very bright lighting effects - but both the driver IC and the LED itself will be working quite strenuously. In this case, the driver/LED combination will draw a lot of current and create a lot of heat (both undesirable). If the LEDs are run at a low intensity, they'll produce very dim lighting effects, but the result will be much less taxing on the driver IC and RGB LED package. We try to run the RGB LEDs somewhere just above the middle of their operating range in most situations. However, the overall feature lighting brightness in the game can be adjusted in the System Settings menu (see pg B-25 of this manual).



## E.4 Dialed In Playfield Post Adjustments

**Preparations:** Ensure that all 5 pinballs are in the trough or completely removed from the game (not in the shooter lane, STATION 3 lock, subway or any of the eject holes). Power down the game and remove the playfield glass. Pull the playfield up and out of the cabinet, to position 2 (shown on pg A-8 of this manual).

### Tools Required:

Ratchet  
1/4", deep socket  
11/32" socket

You can make a couple of post adjustments on the Dialed In playfield to make your game play either more liberally or more conservatively.

**1)** The steel mini post near the left outlane (circled in red in figure E4) can be repositioned (or removed altogether) to make the game play more or less liberally/conservatively. There are two pre-drilled mounting holes in the playfield. The most liberal post position is the highest (furthest from the player) of the two holes (making it more difficult for the ball to get to the left outlane). When the post is moved closer to the inlane/outlane divider, the game will play more conservatively (making it easier for the ball to get to the left outlane). The most conservative adjustment is to remove the post altogether. See the mini post removal or installation instructions below. No plugs are necessary for the unused hole(s) in the playfield.

**2)** The dual rubber, steel adjusting post near the right outlane (circled in blue in figure E4) can be repositioned (or removed altogether) to make the game play more or less liberally/conservatively. There is a mounting slot routed in the playfield. The most liberal post position is the lowest (closest to the player) in the slot (making it more difficult for the ball to get to the right outlane). As the adjusting post is moved further from the player, the game will play more conservatively (making it easier for the ball to get to the right outlane). The most conservative adjustment is to remove the post altogether. See the adjusting post repositioning/removal or installation instructions below.

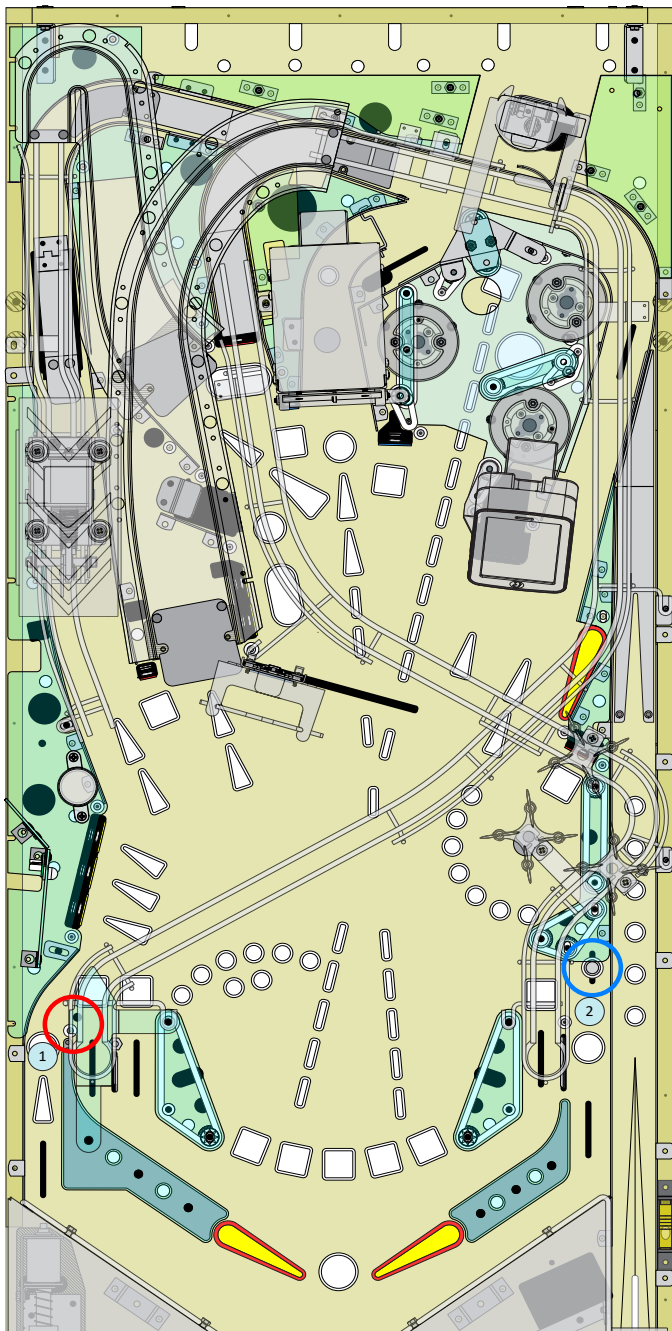


Figure E4. Dialed In playfield adjustable posts.

***To remove the steel mini post:*** The first step is to firmly grasp the rubber ring and pull it straight up, off of the post. The left outlane mini post on Dialed In is screwed into an 8-32 T-nut, attached to the bottom of the playfield. Using the ratchet and 1/4", deep socket from above, slowly unthread the post from the T-nut. Carefully pull the mini post and washer straight up, out of the playfield hole.

**IMPORTANT:** Apply **minimal** downward pressure as you loosen and remove the mini post; excessive downward pressure will push the T-nut out of the back of the playfield (and it will likely end up in the bottom of your cabinet). If this occurs, locate the T-nut, re-insert it into the playfield hole from underneath, align the T-nut's "teeth" with the indentations in the wood and gently tap it back into place with a small hammer. Note: You may have to remove an RGB LED board or game assembly in order to gain access to the playfield hole.

***To install the steel mini post:*** Slide the #8 washer onto the threaded end of the mini post and insert it into the desired playfield mounting hole, from above. Carefully align the threads of the post with T-nut and begin threading it, by hand, into the hole (slowly turning it in a CW direction). **IMPORTANT:** Apply **minimal** downward pressure as you install the mini post; excessive downward pressure will push the T-nut out of the back of the playfield (if this occurs, refer to instructions in previous paragraph to re-install it). When it becomes difficult to turn the post by hand, use the ratchet and 1/4", deep socket to finish the installation. When done, the post will be all the way down to playfield surface level and firmly held in place. You should not be able to move the post at all by hand when you are done. **DO NOT OVERTIGHTEN!** Lastly, install the post rubber ring, by sliding it over the top of the mini post.

***To reposition the steel adjusting post:*** Locate the washer and nylon stop nut for the adjusting post under the playfield. Using the ratchet and the 11/32" open end wrench from below, loosen the nylon stop nut until the post feels free to move. Slide the adjusting post into the new desired position in the playfield slot and hold it, from above, while you re-tighten the stop nut under the playfield. When done, the bottom of the adjusting post should be all the way down, against the playfield surface, level and firmly held in place. You should not be able to move the post at all by hand when you are done. **DO NOT OVERTIGHTEN!**

***To remove the steel adjusting post:*** Locate the washer and nylon stop nut for the adjusting post under the playfield. Using the ratchet and the 11/32" open end wrench from below, remove the nylon stop nut and washer from the bottom of the post screw. Carefully pull the adjusting post straight up, out of the routed playfield slot.

***To install the steel adjusting post:*** Install the two rubber rings by sliding them over the top of the adjusting post. Slide the threaded end of the adjusting post through the center of the routed slot in the playfield. Align the metal tab under the post with the slot as you carefully push the post through the playfield. Install the #8 washer and 8-32 nylon stop nut to the threaded end of the post from underneath. Using the ratchet and 11/32" socket, from below, slowly and carefully tighten the nylon stop nut until the adjusting post is pulled almost all the way down to the playfield surface. Slide the post into the desired position in the playfield slot and hold it, from above, while you finish tightening the stop nut under the playfield. When done, the bottom of the adjusting post should be all the way down, against the playfield surface, level and firmly held in place. You should not be able to move the post at all by hand when you are done. **DO NOT OVERTIGHTEN!**



Figure E5. JJP® App main screen.



Figure E6. Successful Dialed In - JJP® App sync screen.

## E.5 The Jersey Jack Pinball® App

Jersey Jack Pinball® has developed an application (app) for your mobile devices to interact with our pinball machines and enhance your playing experience. Dialed In is the first JJP® game designed and developed to sync and function with the app. To try the app out with your Dialed In game, follow the directions below.

- 1) The first step is to locate the free Jersey Jack Pinball® App in your mobile device's App Store (search "Jersey Jack Pinball"), download and install it.
- 2) Ensure that the Bluetooth dongle is installed in your Dialed In game. Open the coin door and look inside the cabinet, to the left side of the coin box. Your Bluetooth dongle should be plugged into the free end of a USB extension cable, which is fastened to a wooden cabinet cross member. This extension cable is typically used for software updates and settings backup/restore.
- 3) Ensure that Bluetooth is enabled on your mobile device. Run the Jersey Jack Pinball® App; you will be prompted to enter your name on the initial app launch. Your mobile device will display a Dialed In screen (see figure E5) with two flipper buttons, a Big Bang! button and the mysterious Element button.
- 4) Start a new game on your Dialed In game. Place your mobile device on the playfield glass, just above the lockdown bar. With the first ball still in the shooter lane, press and hold the left flipper button on the game while pressing and holding the left flipper button on the JJP® App screen for a few seconds. When the game and the app sync properly, a welcome message will appear in the upper left corner of the game's 27" display; a phone icon will appear on the opposite side of the display (figure E6).

The JJP® App tracks your most recent and highest Dialed In scores. It also allows you to control the flippers in the game, trigger Big Bang! events and control the elements (during multiball) all from the screen of your mobile device.



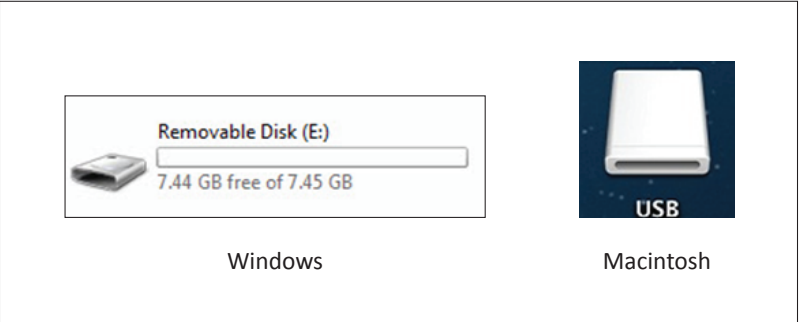


Figure E7. Icons for USB stick.

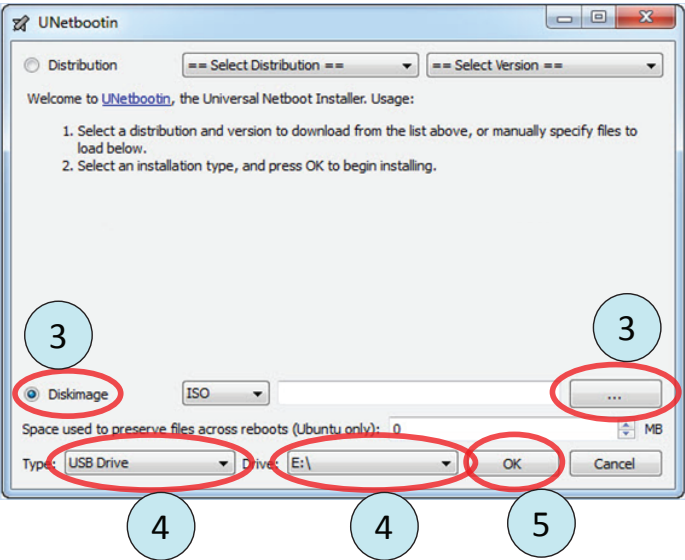


Figure E8. Initial UNETBOOTIN application window.

# E.6 Performing a Full Software Update

**Preparations:** Visit <https://www.jerseyjackpinball.com/support/> and download the latest full Dialed In software update. If you have not already done so, download the UNETBOOTIN utility for Windows or Macintosh.

**Tools Required:**  
Personal computer  
8 GB (min) USB memory stick

The full software update is also referred to as a factory reinstallation of game software. At times, a full software update will be the only method for updating your game, as critical, underlying operating system changes are often required.

- 1) Insert an 8 GB USB memory stick into an empty USB slot in your personal computer. **WARNING: All data on the USB stick will be erased during this process!** You should see a new **Removable Disk** under **My Computer** (Windows) or a new **Drive** on your **Desktop** (Macintosh), as shown in figure E7.
- 2) Run the UNETBOOTIN application. The UNETBOOTIN window (shown in figure E8) will open.
- 3) Select the **Disk Image** option, then click the '...' button (both are circled in figure E8). Locate and select the Dialed In ISO file you downloaded from the Jersey Jack Pinball® website.
- 4) Ensure that the **USB Drive** is selected under **Type** and the USB stick you inserted earlier ("E:\\" in this example) is selected under **Drive** (both are circled in figure E8).
- 5) Click the **OK** button to begin the copy/burn process, which will take approximately 10-20 minutes to complete (depending upon the speed of your computer). Again, all data on the USB stick will be erased during this process.

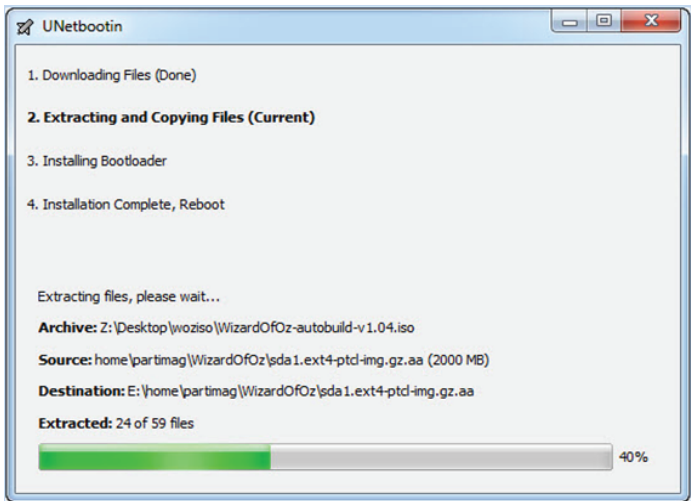


Figure E9. UNETBOOTIN copy/burn progress window.

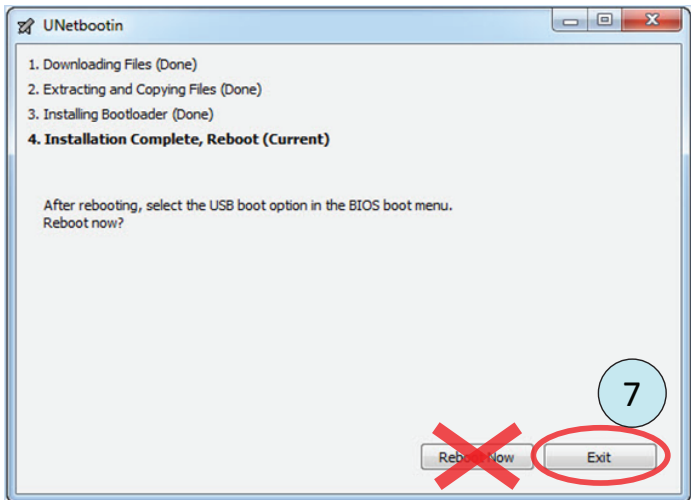


Figure E10. UNETBOOTIN installation complete window.

6) Throughout the ISO image copy/burn process, the window in figure E9 will be displayed and updated.

7) When the copy/burn process is complete, the window in figure E10 will be displayed. **WARNING: DO NOT CLICK THE 'Reboot Now' BUTTON!** Click the **Exit** button or the red X in the upper corner of the window.

8) Remove the USB stick from your personal computer. Power your game down and insert the USB stick you burned into the USB cable attached to the cabinet divider, behind the coin box, just inside your game's coin door.

9) Power up your game with the USB stick inserted. The game will auto-update with no user input; do not power the game down during the update process (which will take less than 5 minutes).

10) When the update is complete, the screen in figure E11 will be displayed on the game's LCD monitor. Power the game down, remove the update USB stick and power it on again. Your game will boot up running the new version of software (which can be verified by entering the Dialed In menu system - see Section B). Store your 8 GB USB stick in a safe place; it can be used to perform another full software update in the future (to this same software version or a newer one).

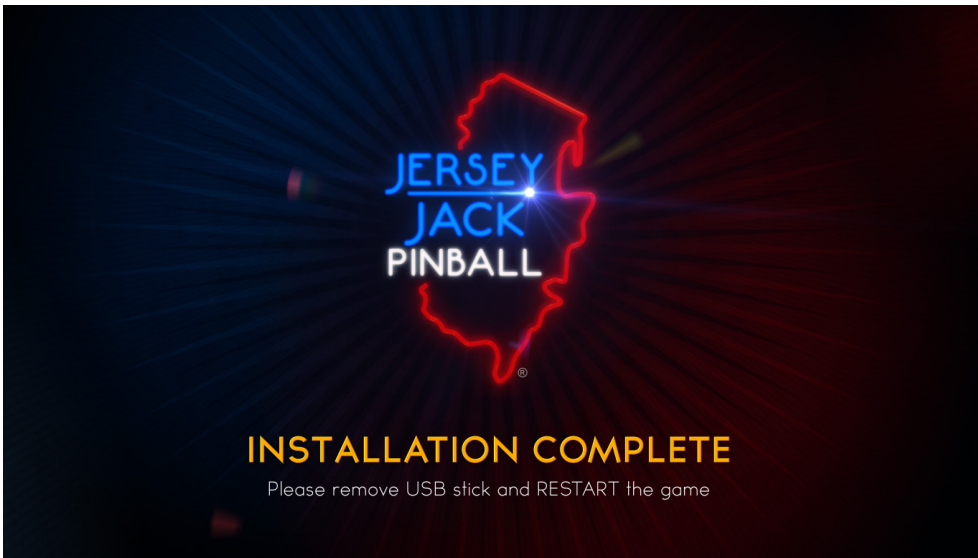


Figure E11. Update installation complete!

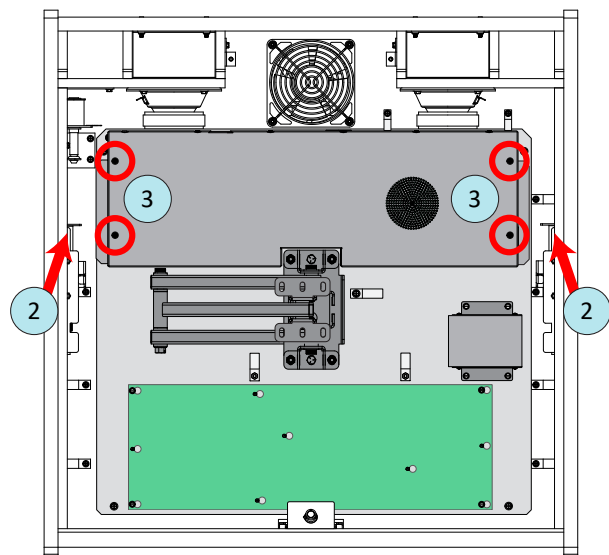


Figure E12. Removing PCB chassis lid.

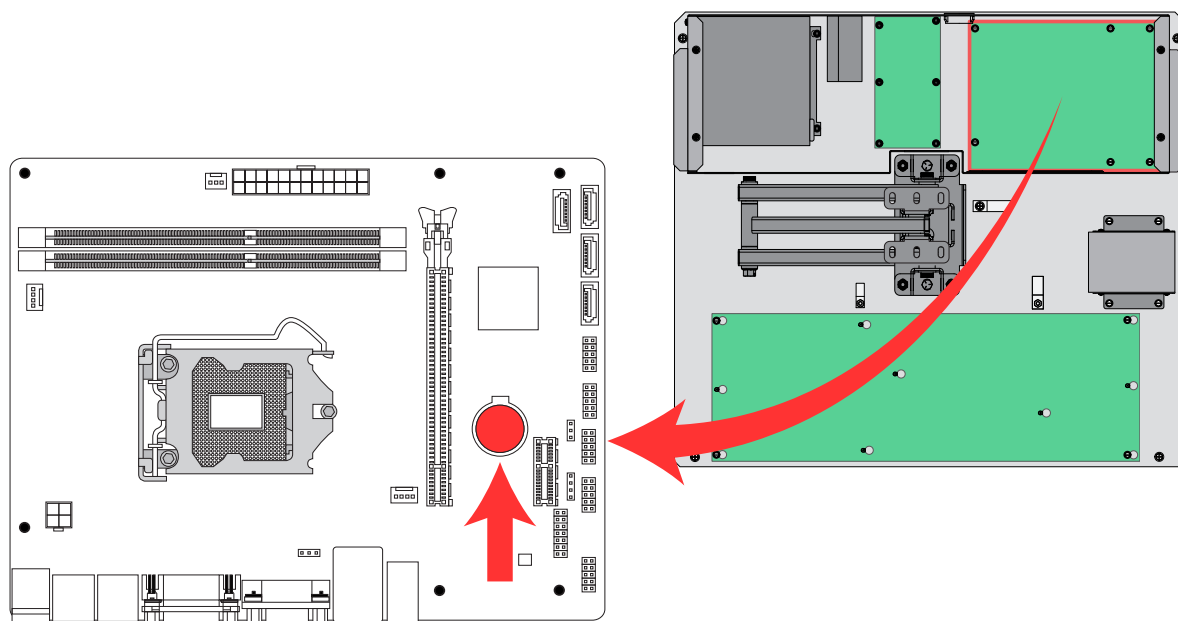


Figure E13. CPU board and battery locations.

## E.7 Replacing Your Game's CPU Battery

Your game's CPU board uses a 3V coin cell, lithium battery (CR2032) to maintain its basic input/output system (BIOS) settings when the game is powered down. If these settings are lost, the CPU will not boot when the game is powered up. The life expectancy of the CR2032 battery is approximately three years. It is important to change your game's CPU battery before it discharges below 3V. However, in order to preserve the CPU's BIOS settings, the change must be made while the game is powered on. A step-by-step process for replacing the battery is provided below.

- 1) With the game off, open the coin door and locate the keys to the backbox lock (hanging on a hook, alongside one of the coin mechanisms). Unlock the backbox lock (item 2 on pg C-45), slide the backglass upward and remove it, bottom edge first. Carefully set it aside.
- 2) Release the 27" LCD monitor, by lifting the two latches, top left & right (red arrows, figure E12), while carefully pulling the screen straight out of the backbox. Extend the screen outward, then swing it over to either side of the backbox.
- 3) Disconnect the Backbox LED Strip cable (left, inside of the backbox) and free the loose end from the nylon cable clamp(s). Remove the lid of the Backbox PCBs EMI Shield Enclosure by removing the four HWH Phillips machine screws (circled in red, figure E13); set the lid and the four screws aside.
- 4) Locate the CPU board (upper right corner of the EMI shield enclosure), then the shiny, CR2032 coin cell battery & holder mounted on its surface (red arrow and circle, figure E13). Note the orientation of the battery in its holder (with the battery label/imprint facing *outward*).
- 5) Power the game on and wait for it to complete its boot cycle. Cut a 3-inch long piece of masking tape and fold it 1 inch from the end. This should form a 1-inch long "handle" and leave a 1-inch long adhesive end.
- 6) Briefly touch the lockdown bar on the game to dissipate any static charge in your body **before** touching the CPU board.
- 7) Carefully affix the adhesive portion of the tape onto the top of the CR2032 battery, applying moderate pressure. **WARNING:** Do *not* flex the CPU circuit board! Rub the surface of the tape, back and forth, to ensure that it attaches well to the battery - *not* the holder.

- 8) Holding onto the tape “handle” with one hand, free the battery from its holder clip with the other. Ensure that the battery does not touch anything on the surface of the CPU board as you pull it out of its holder and away from the PCB Chassis.
- 9) Pull the tape “handle” off of the old battery and apply it to the top of a new CR2032 battery.
- 10) Again, momentarily touch the lockdown bar on the game.
- 11) Holding the new battery’s tape “handle”, carefully insert it into the battery holder, in the same orientation as the old one (battery label/imprint facing *outward*). Ensure that the battery snaps into its holder properly.
- 12) Carefully remove the tape “handle” from the top of the new battery, ensuring that you do not pull the battery out of its holder in the process.
- 13) Power the game down.
- 14) Replace the Backbox PCBs EMI Shield Enclosure lid and re-install the four HWH Phillips machine screws. **CAUTION:** Be careful not to pinch any wires in between the lid and the EMI shield enclosure!
- 15) Pivot and swing the 27" LCD back into the backbox. Align it with the left and right side latches. Carefully push one side of the monitor in at a time, lifting the appropriate latch as you do so. Ensure the monitor is all the way inside the backbox, on **BOTH** sides, held firmly in place by the two latches.
- 16) Re-install the game's backglass. Re-lock the backbox lock and put the key back on the hook, alongside one of the coin mechanisms, inside the coin door. Close the coin door.

**Note:** If your game’s CPU battery discharges below 3V (or if you remove the battery) while the game is turned off, all BIOS settings will return to factory defaults. As a result, your game will not boot properly the next time you attempt to power it up. In this case, contact JJP® technical support for assistance in restoring your CPU BIOS settings and getting your game to successfully boot again.





# Appendices



25¢ Standard USA Coin Door Assembly, 12V, No Headphone  
JJP® PN 40-000006-20

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	42-0231-00D	ENTRY BEZEL, IL, PLASTIC
2	2	42-0517-05D	REJECT BUTTON ASSY. YELLOW W/HAPP .25 INSERT
3	2	42-3371-00	PLASTIC MECH HOLDER W/2 METAL CLIPS & SW NO LAMP
4	2	42-0232-00D	RETURN BEZEL, IL, PLASTIC
5	2	42-1247-20	NEW COIN ENTRY RESTRICTOR WITH 2 TEETH
6	2	42-0119-00D	RETURN DOOR FLAP, PLASTIC
7	1	42-0641-00	LOCK ASSY 7/8 W/1-1/8"W/1/8" OFFSET DOUBLE BITTED KD
8	2	43-0022-00	SCREW, 4-40 X .25 PH. PN. HD
9	12	48-1000-00	SCREW, F/BEZEL, LONG 6 X 12 HEX WASHER HD HI-LOW RO
10	4	43-1003-00	SCREW, SPL F/PLAST, #4 X .42/.39 SPL HI THD, B TIP PH HEX W HD
11	1	42-0254-02	LOCKWASHER, F/LOCK 3/4" INTERNAL
12	1	42-0612-20	PINBALL COIN DOOR, 2 ENTRY, BRKT, UPSTACKER MEI VAL
13	1	891-1701-016	FRAME STD DRII S2000 NOTCH BLK
14	4	92000A215	SCREW, PAN HD, M4 X 5MM LG
15	1	891-0100-4016	BLANKING PLATE DBV (BLACK) LARGE OPENING
16	4	42-0082-00	NUT, KEPS 8-32
17	4	890-1051-00	SPACER .20 X.375 DIA X .500 L RICHCO SS10-4
18	1	03-7655-6	CABLE CLAMP, 3/8" DIA.
19	1	43-0127-00	TIE PLATE
20	1	95-0278-00	DANGER LABEL FOR COIN DOORS ELECTRIC SHOCK
21	1	RBM-798	BRKT ASSY 4 BUTTONS FOR PINBALL DOOR
22	2	42-0351-00D	LAMP HOLDER
23	2	42-3079-100	COIN MECH HAPP "PRO MECH" .25 CENT USA
24	2	91-10WB-121W	LED T3 1/4 WEDGE BASE 12V SINGLE LED WHITE

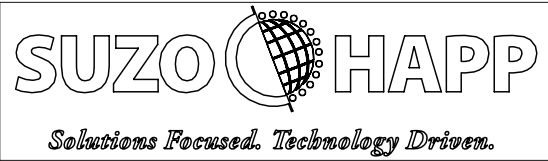
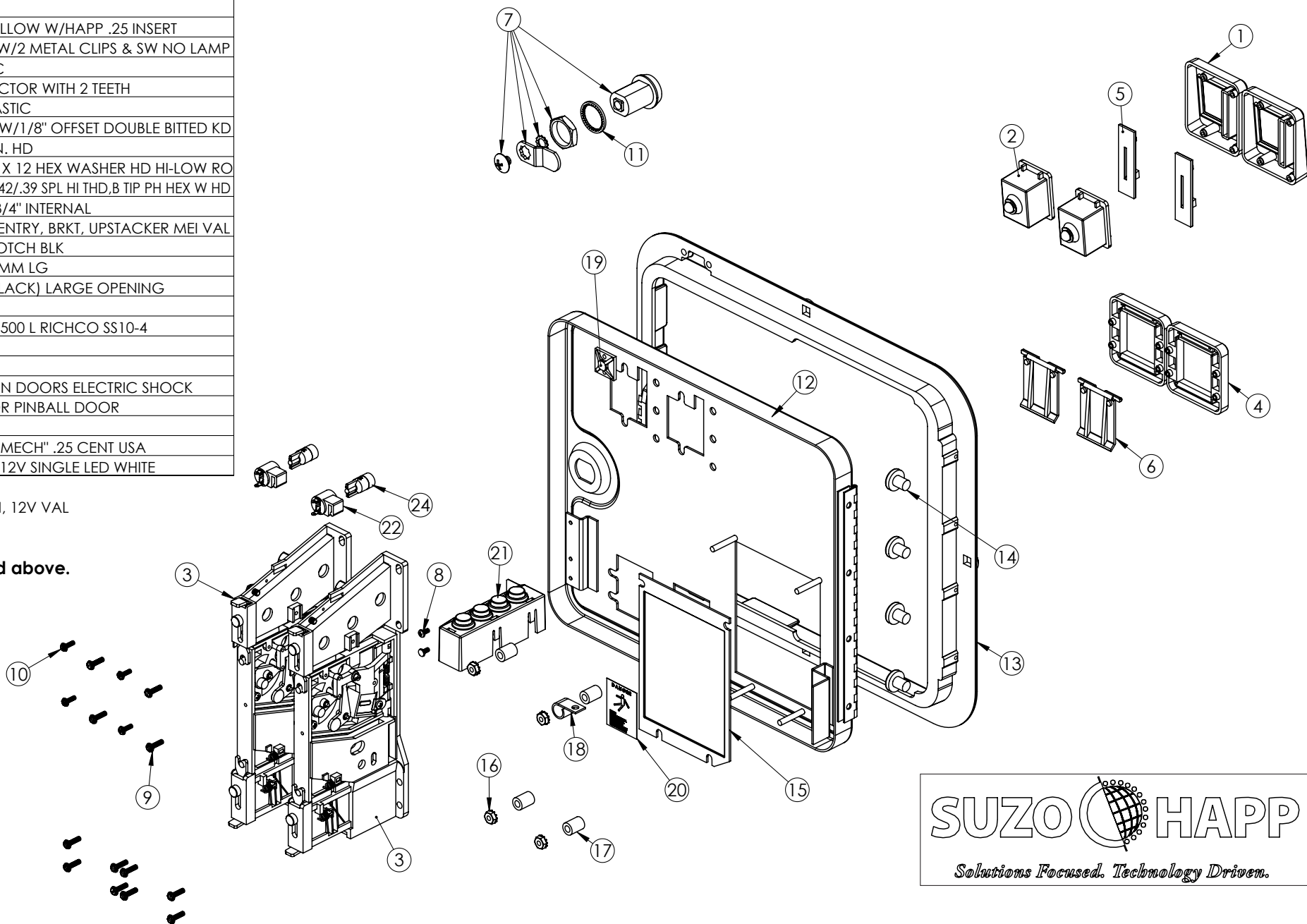
ITEMS NOT SHOWN:

96-1779-00 HARNESS, PINBALL DOOR, 2 SLOT COIN, 12V VAL

90-1013-00 (TIE WRAP), QTY 3

S-11136 CABLE TIE QTY 1

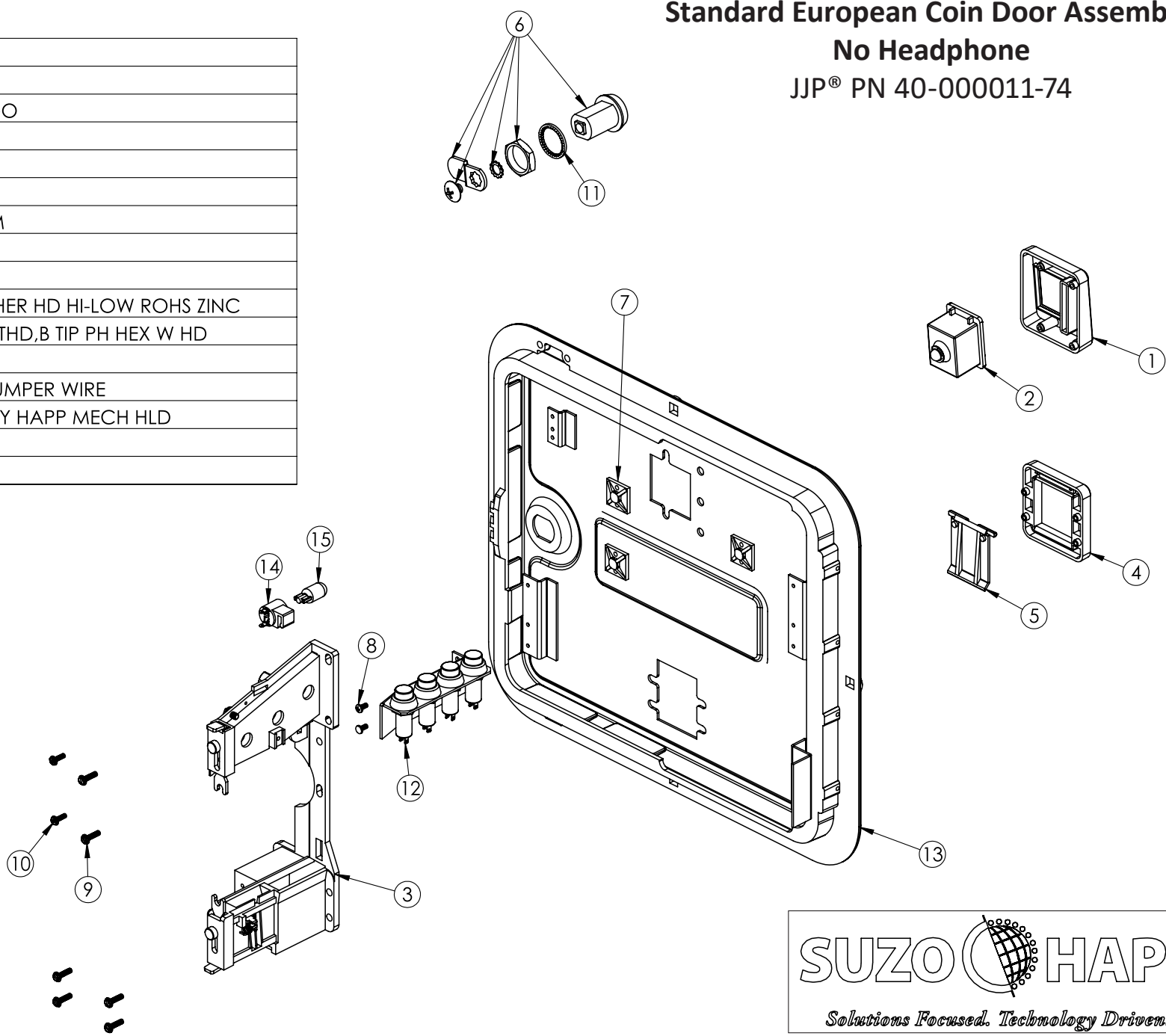
**Note: Suzo-Happ parts and numbers are listed above.**



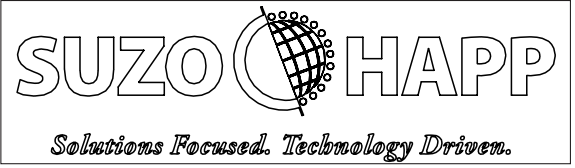


ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	42-0231-00D	ENTRY BEZEL, IL, PLASTIC
2	1	42-0930-00	REJECT BT ASSY YL W/UNIV FINGER LOGO
3	1	42-7355-00D	MECH HOLDER
4	1	42-0232-00D	RETURN BEZEL, IL, PLASTIC
5	1	42-0119-00D	RETURN DOOR FLAP, PLASTIC
6	1	42-0641-00	LOCK ASSY 7/8 W/1 1/8" STRAIGHT CAM
7	3	43-0127-00	TIE PLATE
8	2	43-0022-00	SCREW, 4-40 X .25 PH. PN. HD
9	6	48-1000-00	SCREW, F/BEZEL, LONG 6 X 12 HEX WASHER HD HI-LOW ROHS ZINC
10	2	43-1003-00	SCREW, SPL F/PLAST, #4 X .42/.39 SPL HI THD, B TIP PH HEX W HD
11	1	42-0254-02	LOCKWASHER, F/LOCK 3/4" INTERNAL
12	1	96-0436-04	HARNESS ASSY W/DIODE, 4 BUTTONS, JUMPER WIRE
13	1	42-1072-00	WELLS DR & FRAME ASY PINBALL 1 ENTRY HAPP MECH HLD
14	1	42-0351-00D	LAMP HOLDER
15	1	91-1319-00	LAMP #555 6.3V

ITEMS NOT SHOWN:  
90-1013-00 - TIE WRAP - 3,  
S-11136 CABLE TIE 5" LENGTH .14WIDTH 40LB NATURAL  
**Note: Suzo-Happ parts and numbers are listed above.**



**Standard European Coin Door Assembly,  
No Headphone**  
JJP® PN 40-000011-74



# Acronyms & Abbreviations

A	Ampere	FH	Flat Head	mm	Millimeter	RtM	Right Mount
AC	Alternating Current	FM	Front Mount	MOSFET	Metal-Oxide Semiconductor	RX	Receiver
Adj	Adjustable	F-M	Female - Male		Field-Effect Transistor	SATA	Serial Advanced Technology Attachment
Assy	Assembly	Fm+	Fast-mode Plus	MS	Machine Screw	SD	Secure Digital
Aux	Auxiliary	FP	Footprint	Mtg	Mounting	SH	Socket Head
BAG	Bus, Accelerometer & GI	ft	Feet	N/A	Not Applicable	SEMS	Integral Star Lock Washer
BB	Backbox	ga	Gauge	nF	Nanofarad	SMD	Surface-Mounted Device
Bd	Board	GB	Gigabyte	nm	Nanometer	SMS	Sheet Metal Screw
Bidir	Bidirectional	GI	General Illumination	NPN	Transistor Type	SMT	Surface Mount Technology
BLK	Black	GND	Ground	NS	Not Specified	SOIC-	Small-Outline Integrated Circuit (IC Package)
BLU	Blue	GRN	Green	ns	Nanosecond	SPDT	Single Pole, Double Throw
Brkt	Bracket	GRY	Gray	Ω	Ohm	SPST	Single Pole, Single Throw
BRN	Brown	HWH	Hex Washer Head	OD	Outside Diameter	Std	Standard Edition
CAT5	Category 5 Ethernet Cable	I2C	Inter-Integrated Circuit	OLED	Organic Light-Emitting Diode	STP	Shielded Twisted Pair
CCW	Counterclockwise	IC	Integrated Circuit	ORN	Orange	Sync	Synchronous
Ch	Channel	I/O	Input/Output	PCB	Printed Circuit Board	TAN	Tan
CMOS	Complementary Metal-Oxide Semiconductor	IR	Infrared	PCIe	Peripheral Component Interconnect Express	Tgt	Target
Col	Column	ISO	International Organization for Standardization	pcs	Pieces	TH	Truss Head
Const	Constant	J	Joule	PEM	Brand Name, Threaded Insert	TO-	Transistor Outline (Transistor Package)
CP	Cup Point	JJP®	Jersey Jack Pinball®	pF	Picofarad	TVS	Transient Voltage Suppressor
CPU	Central Processing Unit	kΩ	Kilo Ohm	PF	Playfield	TX	Transmitter
CS	Cap Screw	kHz	Kilohertz	PFH	Phillips Flat Head	μF	Microfarad
CW	Clockwise	LAN	local area network	PLM	Plum	UFm	Ultra Fast-mode
DBA	Dollar Bill Acceptor	LCD	Liquid Crystal Display	PPH	Phillips Pan Head	USB	Universal Serial Bus
DC	Direct Current	LE	Limited Edition	PPM	Parts Per Million	V	Volt
Diam	Diameter	LED	Light-Emitting Diode	PNK	Pink	VGA	Video Graphics Array
DIP	Dual Inline Package	Lg	Large	PN	Part Number	VIO	Violet
Diff	Differential	LM	Left Mount	pos	Position	VUK	Vertical Up-Kicker
DPDT	Double Pole, Double Throw	LR	Lugs Right	Qty	Quantity	W	Watt
Drvr	Driver	LT BLU	Light Blue	RCA	Brand Name Connector	WS	Wood Screw
DVI	Digital Video Interface	LVDS	Low-Voltage, Differential Signaling	RED	Red	w/	With
ea	Each	mA	Milliampere	rev	Revision	WHT	White
Elect	Electrolytic	M-F	Male - Female	RF	Radio Frequency	XCVR	Transceiver
EMP	Electromagnetic Pulse	MHz	Megahertz	RGB	Red, Green, Blue	YEL	Yellow
EOS	End of Stroke	MLCC	Multi-layer Ceramic Capacitor	RM	Rear Mount	“	Inch
F-F	Female - Female	MOV	Metal Oxide Varistor	Rnd	Round		
FCC	Federal Communications Commission	M-M	Male - Male	Rt	Right		



# Jersey Jack Pinball®

## Limited Manufacturer's Warranty



The manufacturer of this Pinball Machine, Jersey Jack Pinball® ("JJP®"), warrants to the holder of a valid proof of purchase ("Purchaser" or "You") that the Pinball Machine ("Machine" or "Product") is free from defects in material and workmanship, pursuant to the following terms and conditions, when installed and used normally and in accordance with operation instructions.

### **What does the Limited Warranty cover - and for how long?**

1. The JJP® "Bumper to Post" Limited Warranty covers every part in your new Jersey Jack Pinball® Machine for a period of 30 days from the date of delivery of the Machine to its original Purchaser.
2. In addition, the JJP® Sound Board, I/O Driver Board, CPU, 4.3" LCD Monitors, 27" LCD Monitor and RGB LED (Light) Boards are covered for a period of one year from the date of delivery of the Machine to its original Purchaser. If the Machine is used for commercial purposes (any use other than in-home use), the JJP® Sound Board, I/O Driver Board, CPU, 4.3" LCD Monitors, and 27" LCD Monitor and RGB LED (Light) Boards are covered for a period of 6 months from the date of delivery of the Machine to its original Purchaser.

**Who is entitled to Warranty coverage?** The original Purchaser.

**What will JJP® do?** JJP® will repair or replace any covered part at no charge for the part, exclusive of shipping and handling charges or any labor to install the part.

**What is not covered?** The Limited Warranty does not cover any labor or service calls necessary to replace any part which is a result of improper installation, shipping or handling charges, negligence, misuse, abuse, alteration, modification, rust of any kind, damage caused by electrical surge or by intrusion of any liquid, repairs by persons other than our authorized service personnel, fire, theft, acts of God (such as a flood), and/or improper electrical connection.

**What must I do?** In order to be eligible for coverage you must register your JJP® Machine within 5 days of delivery on-line at [www.JerseyJackPinball.com](http://www.JerseyJackPinball.com), by emailing [Service@JerseyJackPinball.com](mailto:Service@JerseyJackPinball.com) or by calling 732-364-9900.

If a covered part requires repair or replacement, email us at [Service@JerseyJackPinball.com](mailto:Service@JerseyJackPinball.com) or open a service ticket at the Jersey Jack Pinball® website and enter a brief, written description of the problem. You may also call us at 732-364-9900; however all warranty claims must be in writing. For repair or replacement, the covered part must be shipped, prepaid, to us or to an authorized JJP® distributor. The repaired, or replacement part, will be returned to You upon warranty verification. In the event that You want a replacement part in advance of returning the original part to JJP®, you must order the part from your authorized distributor and advance the retail cost for the replacement part. The original part must be returned within 21 days for warranty verification. Upon verification of warranty, the amount paid for the advance replacement part will be fully refunded.

**State Law Rights:** This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

**Exclusive Agreement:** This limited warranty is the complete and exclusive agreement between You and JJP®. It supersedes all other written or oral communications related to this Product. JJP® provides no other warranties for this Product. The warranty exclusively describes all of JJP®'s responsibilities regarding the Product. There are no other express warranties. No one is authorized to make modifications to this limited warranty and you should not rely on any such modification.

**Limitations:** Implied warranties, including those of fitness for a particular purpose and merchantability (an unwritten warranty that the Product is fit for ordinary use) are excluded. Some states do not allow the exclusion or limitation of implied warranties, so the above limitation or exclusion may not apply to you.

In no event shall JJP® be liable for any indirect, special, incidental, consequential, or similar damages (including, but not limited to, lost profits or revenue, inability to use the Product, or other associated equipment, the cost of substitute equipment, and claims by third parties) resulting from the use of this Product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

## WARNINGS & NOTICES

### **WARNING**

**FOR SAFETY AND RELIABILITY**, substitute parts and equipment modifications are not recommended. Use of non-Jersey Jack Pinball® parts or modifications of game circuitry, may adversely affect game play, or may cause injuries. Substitute parts or equipment modifications may void FCC/Canada Type Acceptance.

**PROLONGED EXPOSURE to high volume levels through the** cabinet headphone jack can lead to irreversible hearing loss. See **Section E** of this manual for more information.

**BECAUSE THIS GAME IS PROTECTED** by Federal copyright, trademark and patent laws, unauthorized game conversions may be illegal under Federal law.

**THIS 'CONVERSION' PRINCIPLE ALSO APPLIES** to unauthorized facsimiles of Jersey Jack Pinball® equipment, logos, designs, publications, assemblies and games (or game feature not deemed to be public domain), whether manufactured with Jersey Jack Pinball® components or not.

**IF THE LINE CORD IS DAMAGED**, it must be replaced with a cord provided by the game manufacturer (or an equivalent) in order to avoid a hazard.

### **Notice**

INVISIGLASS® is a registered trademark of Jersey Jack Pinball®. The entire contents of this manual are ©2018 Jersey Jack Pinball®, manufacturers of Jersey Jack Pinball® Amusement Games. All rights reserved.

### **WARNING**

**NOTE:** This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

### ***RF Interference Notice***

CABLE HARNESS PLACEMENTS and ground strap routing on this game have been designed to keep RF radiation and conduction within levels accepted by the FCC Rules.

TO MAINTAIN THESE LEVELS, reposition harnesses and reconnect ground straps to their original placements, if they become disconnected during maintenance.

**FCC/CANADA STICKER.** Check the back of your game to verify that an FCC/Canada-certification sticker was attached to your game at the factory. All Games that leave the Jersey Jack Pinball® plant have been tested and found to comply with FCC/Canada Rules. Because the sticker is proof of this fact, legal repercussions to the owner and distributor may result if the sticker is missing. If you receive a game that has no FCC/Canada sticker, call Jersey Jack Pinball® for advice or write us a note on your Game Registration Card. Be sure that the card bears your game's serial number.

### **FOR SERVICE...**

CALL your authorized  
Jersey Jack Pinball® Distributor

or VISIT our support site:  
<https://www.jerseyjackpinball.com/support/>

### **Jersey Jack Pinball®**

1645 Oak Street  
Lakewood, NJ 08701

***CAUTION:* Transport this game ONLY with the hinged backbox DOWN!**